

Curriculum Vitae

Alcherio Martinoli

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EDUCATION

Ph.D., Computer Science, Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland, October 1999. Ph.D. Thesis: *Swarm Intelligence in Autonomous Collective Robotics: From Tools to the Analysis and Synthesis of Distributed Control Strategies* (see <https://infoscience.epfl.ch/> for download). Thesis adviser: Prof. Jean-Daniel Nicoud. Minor in Biologically-Inspired Computing.

M.Sc., Electrical Engineering, Swiss Federal Institute of Technology in Zurich (ETHZ), Switzerland, April 1992. Master Thesis: *Balancing an Inverted Pendulum using an Industrial Manipulator*. Thesis adviser: Prof. Gerhard Schweitzer. Master courses in automatic control (linear continuous- and discrete-time systems, nonlinear systems, optimal control), biomedical engineering, microsensors, and solid state physics.

PROFESSIONAL EXPERIENCE

May 2008 – now: *Associate Professor, Director of the Distributed Intelligent Systems and Algorithms Laboratory (DISAL)*, Institute of Environmental Engineering (IIE), School of Architecture, Civil and Environmental Engineering (ENAC), EPFL.

August 2003 – April 2008: *Swiss National Science Foundation Junior Professor, Head of the Swarm-Intelligent Systems Group (SWIS)*, Institute of Communication Systems, School of Computer and Communication Sciences.

September 2003 – June 2006: *Part-time Visiting Associate in Mechanical Engineering*, California Institute of Technology (Caltech), Pasadena, CA, U.S.A.

Oct 2001 – August 2003: *Senior Research Fellow, Head of the Collective Robotics Group (CORO)*, Department of Electrical Engineering, Center for Neuromorphic Systems Engineering (CNSE), Caltech.

Dec 1999 – Sep 2001: *Postdoctoral Scholar, Head of the Collective Robotics Group*, Department of Electrical Engineering, Microsystems Laboratory (Director: Prof. Rodney M. Goodman), Caltech.

May 1995 – Oct 1999: *Research Assistant, Leader of the Collective Robotics Group*, Microprocessor Systems Laboratory (Director: Prof. Jean-Daniel Nicoud), EPFL.

Oct 1993 – July 1994: *Research Assistant*, Institute of Industrial Automation, Spanish Research Council, Madrid, Spain. Supervisor: Dr. Manuel A. Armada. Designed and developed a dynamic simulator for biped robots and installed a gait analysis laboratory.

Jun 1992 – Sep 1993: *Research Assistant*, Institute of Biomedical Engineering and Medical Informatics (Director: Prof. Max Anliker), ETHZ. Designed and developed a mechatronic phantom for arterial blood flow simulation.

Mar 1988 – Jun 1988: *Member of Technical Staff*, Olivetti-Hermes, Zurich, Switzerland. Maintenance and repairing of PCs and peripherals.

TEACHING

Current courses

Yearly since AY 2009-2010 (5 ECTS), EPFL BS course ENG-366: Signals, Instruments, and Systems. Compulsory course for environmental engineers (SIE teaching section) and optional for civil engineers (SGC); attended by about 40 students per iteration. For additional organization and content details, see also https://disal.epfl.ch/teaching/signals_instruments_systems/.

Yearly since AY 2009-2010 (5 ECTS), EPFL MS course ENG-466: Distributed Intelligent Systems. Optional course for multiple master programs: environmental engineering (SIE), computer science and engineering (SIN), communication systems (SSC), microengineering and robotics (SMT), mechanical engineering (SGM), electrical engineering (SEL), computational science and engineering (CSE), energy management and sustainability (MES), minor in biocomputing (SSV); attended by about 60 students per iteration. For additional organization and content details, see also https://disal.epfl.ch/teaching/distributed_intelligent_systems/.

Every two years since summer Semester 2009-2010 (4 ECTS), EPFL doctoral course ENG-605: Topics in Autonomous Robotics, with A. Billard (EPFL), D. Floreano (EPFL), Auke Jan Ijspeert (EPFL), Francesco Mondada (EPFL) and further guest lecturers; attended by 10-20 students per iteration, see also <http://moodle.epfl.ch/course/view.php?id=252> (only accessible as EPFL user).

Previous courses

Every two years, two editions in total (4 ECTS), EPFL doctoral course CIVIL-707: Intelligent Transportation Systems, with M. Bierlaire (EPFL), N. Geroliminis (EPFL), and a potential guest lecturer; a few students per iteration.

Every two years, three editions in total (4 ECTS), EPFL doctoral course ENV-719: Localization and Navigation Methods, with B. Merminod (EPFL), J. Skaloud (EPFL), and a potential guest lecturer; a few students per iteration.

One edition only in total, EPFL (3 ECTS), EPFL BS course: An Introduction to Embedded and Real-Time Systems, literature pointers suggested during the course.

Every two years, two editions in total (4 ECTS), EPFL doctoral course: Autonomous Robots, with A. Billard (EPFL), D. Floreano (EPFL), Auke Jan Ijspeert (EPFL), and an invited lecturer rotating each year, selected research papers suggested during the course.

Yearly, three editions in total (4 ECTS), EPFL MS course: Modeling the Immune System, with N. Debar (ISREC), J.-P. Kraehenbühl (ISREC), and J.-Y. Le Boudec (EPFL); selected research papers distributed during the course.

Yearly, four editions in total (6 ECTS), EPFL MS course: Swarm Intelligence. Course book: E. Bonabeau, M. Dorigo, and G. Theraulaz, "Swarm Intelligence: From Natural to Artificial Systems", 1999; selected research papers distributed at each lecture.

Yearly, two editions in total (11 credits), Caltech BS (junior and senior) and MS course EE 150 and EE141: Swarm Intelligence. Course book: E. Bonabeau, M. Dorigo, and G. Theraulaz, "Swarm Intelligence: From Natural to Artificial Systems", 1999; selected research papers distributed at each lecture.

Invited tutorials and intensive courses

Tutorial: Engineering for Large Distributed Systems: The Main Challenges, co-lectured with M. Mastrangeli and G. Mermoud. Nanotera.ch Summer School on Micro-Nano for Large Distributed Systems, Neuchâtel, Switzerland, August 2011.

Tutorial: Distributed Sensing using Multi-Robot Systems: From Coverage to Search. International summer school organized by the Cooperating Objects Network of Excellence on "Act-Control-Move: Beyond Networked Sensors", Schloss Dagstuhl, Wadern, Germany, August 2010.

Tutorial: An introduction to Swarm Robotics. International Summer School on Collective Intelligence and Evolution, Vrije Universiteit Amsterdam, Netherlands, August 2007.

Tutorial: Swarm Robotics: Introduction, Analysis and Synthesis Methods. Workshop on Autonomous Computing in Smart Environments (3^{ème} cycle romand d'informatique), University of Fribourg, Fribourg, Switzerland, November 2006.

Tutorial: An Introduction to Swarm Robotics. Fifth International Workshop on Ant Colony Optimization and Swarm Intelligence (ANTS-06), Université Libre de Bruxelles, Belgium, September 2006.

Intensive course (1 week): Biologically Inspired Collective Robotics. Seminar series on Interacting Particles and Computational Biology, De Giorgi Research Center, Scuola Normale Superiore, Pisa, Italy, February 2003.

Tutorial: Embedded Swarm Intelligence: Towards Methodologies for Engineering Large-Scale Distributed, Mobile Systems. Workshop on Collective Intelligence (3^{ème} cycle romand d'informatique), University of Fribourg, Fribourg, Switzerland, February 2002.

Teaching assistant and student project supervision activities

Oct 1995 – Mar 1999: *Teaching Assistant in mobile robotics and C programming language*, Microprocessor Systems Laboratory, EPFL.

Oct 1992 – Jul 1993: *Teaching Assistant in ultrasound imaging*, Institute of Biomedical Engineering and Medical Informatics, ETHZ.

Jan 1989 – Jul 1991: *Help Teaching Assistant in mechanics*, Institute of Mechanics, ETHZ.

Since 1995, direct and indirect supervision of more than 200 student projects (master, semester, summer projects; internships), both at Caltech and EPFL. Students are sometime coming from other institutions worldwide and carrying out projects in the framework of their studies (graded projects) or possibly sponsored internships. Some of our EPFL students also carry out master theses in industry or abroad. A short description of the student projects supervised during the last five years can be found here: https://www.epfl.ch/labs/disal/teaching/student_projects/. Older student projects are directly listed in the corresponding research projects pages here: <https://www.epfl.ch/labs/disal/research/>. The name of the students having carried out a project with us at EPFL are listed here: <https://www.epfl.ch/labs/disal/people/alumni/>.

RESEARCH SUPERVISION AND GUIDANCE

Research Supervisor/co-Supervisor to *PhD Students* (30):

Current (6)

Faëzeh Rahbar (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Oct 15 – now.

Anwar Quraishi (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Mar 16 – now.

Izzet Kağan Erünsal (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS, EPFL; Doctoral Program in Electrical and Computer Engineering, IST): Nov 17 – now, co-supervision with Prof. R. Ventura (IST, Lisbon, Portugal).

Chiara Ercolani (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Oct 18 – now

Cyrill Baumann (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Oct 19 – now.

Wanting Jin (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): May 21 – now.

Graduated with postdoctoral extension (10)

Duarte Dias (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS, EPFL; Doctoral Program in Electrical and Computer Engineering, IST): Sep 12 – Nov 18, co-supervision with Prof. P. Lima (IST, Lisbon, Portugal); PhD Thesis EPFL-IST No. 9224, November 2018: “Distributed State Estimation and Control of Autonomous Quadrotor Formations Using Exclusively Onboard Resources”; postdoctoral extension: Dec 18 – Aug 19. Next and current employment: Flight Control Engineer, UAVenture AG, Aarau, Switzerland.

Zeynab Talebpour (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Mar 13 – Nov 2018; PhD Thesis EPFL No. 9175, December 2018: “A Framework for Cooperative Human-Aware Navigation and Coordination of Multi-Robot Systems in Social Environments”; postdoctoral extension: Dec 18 – May 19.

Next and current employment: Research Fellow at Advanced Intelligent Systems, Burnaby, BC, Canada and Postdoctoral Fellow at University of British Columbia, Vancouver, Canada.

Bahar Haghghat (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Nov 12 – May 18; PhD Thesis EPFL No. 8599, June 2018: “Design, Modeling, and Control Methods for Fluid-Mediated Programmable Self-Assembly of Resource-Constrained Robotic Modules”; PhD Thesis recognized with the EDRS PhD Thesis Distinction 2018 and Gilbert Hausmann Award 2019; postdoctoral extension: Jun 18 – Sep 18. Next and current employment: Postdoctoral Fellow at the Self-Organizing Systems Research Group (Prof. R. Nagpal), Harvard University, Boston, MA, USA.

Maria Boberg (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Jun 10 – Jun 16, co-supervision with Dr. G. Feltrin (EMPA, Dübendorf, Switzerland); PhD Thesis EPFL No. 7069, August 2016: “Mitigation of Wind-Induced Vibrations in Long-Span Bridges using a Distributed Flap System”; postdoctoral extension: Jul 16 – Nov 16. Next employment: Embedded Software Consultant at Sigma Technology Consulting AB, Stockholm, Sweden. Current employment: Senior Software Engineer at Swedish Space Corporation Inc., Solna, Sweden.

Adrian Arfire (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Oct 10 – Jun 16; PhD Thesis EPFL No. 7068, August 2016: “Mobile Sensor Networks for Air Quality Monitoring in Urban Settings”; postdoctoral extension: Jul 16 – Sep 16. Next and current employment: Metrology Engineer specialized in IoT at Airparif, Paris, France.

José Nuno Pereira (Doctoral Program in Manufacturing Systems and Robotics, EDPR, EPFL; Doctoral Program in Electrical and Computer Engineering, IST): Jan 09 – Mar 14, co-supervision with Prof. P. Lima (IST, Lisbon, Portugal); PhD Thesis EPFL-IST No. 6237, March 2014: “Advancing Social Interactions Among Robots: An Institutional Economics-based Approach to Distributed Robotic Systems”; postdoctoral extension: May 14 – Apr 16. Next employment: Robotics Specialist at Aeolus Robotics Inc., Geneva, Switzerland (remote operation). Current employment: Research and Development Manager at SeeByte, Edinburgh, Scotland, UK.

Ezequiel Di Mario (Doctoral Program in Electrical Engineering, EDEE): Dec 10 – Jun 15; PhD Thesis EPFL No. 6707, August 2015: “Distributed Multi-Robot Learning using Particle Swarm Optimization”; postdoctoral extension: Jul 15 – Nov 15. Next employment: Robotics and Navigation Engineer, iRobot Inc., Pasadena, USA; current employment: Software Engineer at Google Inc., Pasadena, USA (remote operation).

Amanda Prorok (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 08 – Apr 13; PhD Thesis EPFL No. 5746, June 2013: “Models and Algorithms for Ultra-Wideband Localization in Single- and Multi-Robot Systems”; PhD Thesis recognized with the ABB Award 2014; postdoctoral extension: May 13 – Jul 13. Next employment: Product Manager at Sensirion Inc., Stäfa, Switzerland; current employment: Assistant Professor (University Lecturer) at University of Cambridge, UK.

Thomas Lochmatter (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 05 – Jan 10, PhD Thesis EPFL No. 4628, February 2010: “Bio-Inspired and Probabilistic Algorithms for Distributed Odor Source Localization using Mobile Robots”; PhD Thesis nominated for the 2010 Chorafas Foundation Award; postdoctoral extension: Feb 10 – Dec 10. Next employment: Lecturer in the Computer Science section (SIN) for the Environmental Sciences and Engineering section (SIE) at EPFL; Founder and CEO of the educational software company Wizzy Education Technologies S.A., Ecublens, Switzerland; current employment: Founder and CEO of LoThoSoft Lernsoftware GmbH, Brig-Glis, Switzerland; Founder and Technical Board Member of AirVeraCity Sàrl, a start-up having transferred DISAL technology to the field of air quality monitoring, and Lecturer in the Environmental Sciences and Engineering section (SIE).

Pierre Roduit (Doctoral Program in Manufacturing Systems and Robotics, EDPR): Dec 04 – Dec 08, co-supervision with Prof. J. Jacot (EPFL); PhD Thesis EPFL No. 4262, January 2009: “Trajectory Analysis using Point Distribution Models: Algorithms, Performance Evaluation, and Experimental Validation using Mobile Robots”; postdoctoral extension: Jan 09 – Jun 09. Next and current employment: Professor of Computer Science, Director of the Institute for Energy and Environment, University of Applied Sciences Western Switzerland, Sion, Switzerland.

Graduated without postdoctoral extension (14)

Alicja Wąsik (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS, EPFL; Doctoral Program in Electrical and Computer Engineering, IST): Nov 14 – May 20, co-supervision with Prof. P. Lima (IST, Lisbon, Portugal), PhD Thesis EPFL-IST No. 10147, May 2020: “An Institutional Approach to Normative Distributed Robotics for Mixed Societies of Humans and Robots”; PhD Thesis recognized with the EDRS PhD

Thesis Distinction 2020. Next and current employment: Team Leader for Data Science at Credit Suisse Wroclaw, Poland.

Steven A. Roelofsen (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS): Oct 12 – Oct 17, co-supervision with Dr. D. Gillet (EPFL); PhD Thesis EPFL No. 8403, October 2017: “Vision-Based Sense and Avoid Algorithms for Unmanned Aerial Vehicles”. Next and current employment: Lead Data Scientist at Involi Inc., Renens, Switzerland.

Miloš Vasić (Doctoral Program in Computer and Communication Sciences, EDIC): Sep 12 – Aug 17; PhD Thesis EPFL No. 7856, August 2017: “Cooperative Perception Algorithms for Networked Intelligent Vehicles”; PhD Thesis nominated for the ABB Award 2018. Next employment: Senior Deep Learning Software Engineer at Vuforia Inc., Zurich, Switzerland. Current employment: Principal Member of Technical Staff at Oracle Labs, Zurich, Switzerland.

Jorge M. Soares (Doctoral Program in Robotics, Control, and Intelligent Systems, EDRS; Doctoral Program in Electrical and Computer Engineering, IST): IST-EPFL doctoral program): Oct 10 – Apr 16, co-supervision with Prof. A. M. Pascoal (IST, Lisbon, Portugal), and Prof. A. P. Aguiar (University of Porto, Porto, Portugal); PhD Thesis EPFL-IST No. 7080, April 2016: “Formation-Based Odour Source Localisation Using Distributed Terrestrial and Marine Robotic Systems”. Next employment: Patent Examiner at the European Patent Office, The Hague, Netherlands. Current employment: Research Program Manager at Protocol Labs, Porto, Portugal (remote operation).

William C. Evans (Doctoral Program in Computer and Communication Sciences, EDIC): Mar 10 – Jul 15; PhD Thesis EPFL No. 6673, July 2015: “A Distributed Intelligent Sensing Approach for Environmental Monitoring Applications”. Next employment: Senior Software Engineer at Google Inc., Madison, WI, USA. Current employment: Engineer in Residence, Gradient Venture, Mountain View, CA, USA.

Sven A. Gowal (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 08 – Jul 13; PhD Thesis EPFL No. 5845, August 2013: “A Framework for Graph-Based Distributed Rendezvous of Nonholonomic Multi-Robot Systems”; PhD Thesis nominated for the ABB award 2014. Next employment: Senior Software Engineer at Google Inc., Zurich, Switzerland; current employment: Staff Research Engineer at Deep Mind Inc., London, UK.

Grégory Mermoud (Doctoral Program in Computer and Communication Sciences, EDIC): Sep 06 – Jun 12, co-supervision with Prof. J. Brugger (EPFL); PhD Thesis EPFL No. 5392, June 2012: “Design, Modeling and Optimization of Stochastic Reactive Distributed Robotic Systems”; PhD Thesis nominated for the 2013 IBM award; runner-up of the 2013 Georges Giralt PhD Award - the PhD Thesis got published as a volume of the Springer Tracts in Advanced Robotics series (the three finalists of the 2013 award have been granted with the STAR publication opportunity). Next employment: Software Engineer, Applied Research Team at Cisco Inc., Rolles, Switzerland; current employment: Principal Engineer at Cisco Inc., Sion, Switzerland (remote operation).

Christopher M. Cianci (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 03 – May 09, PhD Thesis EPFL No. 4247, May 2009: “Distributed Intelligent Algorithms for Robotic Sensor Networks Monitoring Discontinuous Anisotropic Environmental Fields”. Next employment: Senior Robotist at Applied Minds Inc., Glendale, CA, USA. Current employment: Co-founder of Giant.AI Inc., Glendale, CA, USA.

James Pugh (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 03 – Dec 08; PhD Thesis EPFL No. 4256, December 2008: “Synthesis, Modeling, and Experimental Validation of Distributed Robotic Search”. Next employment: Senior Analytics Engineer in the New Media Department of the Democratic National Committee in Washington, D.C., USA; current employment: CEO, ShareProgress Inc., San Francisco, CA, USA.

Nikolaus Correll (Doctoral Program in Computer and Communication Sciences, EDIC): Oct 03 – Oct 07; PhD Thesis EPFL No. 3919, October 2007: “Coordination Schemes for Distributed Boundary Coverage with a Swarm of Miniature Robots: Synthesis, Analysis and Experimental Validation”; PhD Thesis nominated for the ABB Award 2008. Next employment: Postdoctoral Fellow at the Distributed Robotics Laboratory (Prof. D. Rus, Massachusetts Institute of Technology, USA); current employment: Associate Professor at the Computer Science Department of the University of Colorado at Boulder, CO, USA, and Founder and CEO of Robotics Materials Inc., Boulder, CO, USA.

Kjerstin Easton (Doctoral Program in Electrical Engineering): Jun 00 – June 06, co-supervision with Prof. J. Burdick (Caltech); PhD Thesis, Caltech, May 2006: “Multi-robot Systems: Modeling Swarm Dynamics and

Designing Inspection Planning Algorithms”. Next employment: Research Scientist at Applied Minds Inc., Glendale, CA, USA. Current employment: Robotics Software Engineering Manager, X - The Moonshot Factory, Mountain View, CA, USA.

Yizhen Zhang (Doctoral Program in Mechanical Engineering): Jun 01 – Jun 06, co-supervision with Prof. E. Antonsson (Caltech); PhD May 2006, Caltech, “Engineering Design Synthesis of Sensor and Control Systems for Intelligent Vehicles”. Next employment: Project Leader at Applied Materials, Inc., Santa Clara, CA, USA.

William Agassounon (Doctoral Program in Electrical Engineering): Dec 99 – June 03, co-supervision with Prof. R. McEliece (Caltech); PhD Thesis, Caltech, May 2003: “Modeling Artificial Mobile Swarm Systems”. Next employment: Principal Scientist at Physical Sciences Inc. Andover, MA, USA; current employment: Principle Autonomy and Communications Engineer at Textron Defense Systems, Wilmington, MA, USA.

Adam Hayes (Doctoral Program in Computation and Neural Systems): Dec 99 – June 02, co-supervision with Prof. R. Goodman (Caltech); PhD Thesis, Caltech, May 2002: “Self-Organized Robotic System Design and Autonomous Odor Localization”. Next employment: Associate at the Mitchell Madison Group LLC., Los Angeles, CA, USA.

Research Supervisor/Co-Supervisor to *Postdoctoral Scholars* (8):

Ali Marjovi (PhD in Electrical and Computer Engineering 2013, University of Coimbra, Portugal): Apr 13 – March 19. Next and current employment: Technical Lead (equivalent to CTO) at Manufacture Modules Technologies SA, Plan-Les-Ouates, GE, Switzerland and Founder and Technical Board Member of AirVeraCity Sàrl, Lausanne, Switzerland, a start-up having transferred DISAL technology to the field of air quality monitoring.

Alexander Bahr (PhD in Applied Ocean Science and Engineering 2008, MIT, Cambridge, MA, USA): Jan 09 – Dec 14. Next and current employment: Founder and COO of Hydromea SA, Renens, Switzerland, a start-up having transferred DISAL technology to the field of underwater robotics.

Felix Schill (PhD in Computer Science 2008, ANU, Camberra, Australia): Nov 12 – Aug 13; Mar 14 – Dec 16. Next and current employment: Founder and CTO of Hydromea SA, Renens, Switzerland, a start-up company having transferred DISAL technology to the field of underwater robotics.

Iñaki Navarro Oiza (PhD in Automation and Robotics 2010, UPM, Madrid, Spain): Feb 13 – Dec 15. Next employment: Software Engineer at Advertima Inc., St. Gallen, Switzerland; current employment: Senior Software Engineer at Roblox, San Mateo, CA, USA.

Andreas Breitenmoser (PhD in Mechanical and Process Engineering 2013, ETH Zurich, Switzerland): Mar 13 – Oct 13. Next employment: Postdoctoral Fellow at the Robotics Embedded Systems Laboratory (Prof. G. Sukhatme), University of Southern California, USA; current employment: Embedded Software Engineer at Sonova Inc., Stäfa, Switzerland.

Massimo Mastrangeli (PhD in Materials Engineering 2010, Katholieke Universiteit Leuven and IMEC, Belgium): Oct 10 – Dec 11, direct supervision; Jan 12 – Aug 13, co-supervision with Prof. J. Brugger (EPFL). Next employment: Senior Scientist at the Department of Micro, Electro and Mechanical Systems of the Université Libre de Bruxelles; current employment: Tenured Assistant Professor, Department of Microelectronics, Technical University Delft, Netherlands.

Julien Nembrini (PhD in Robotics Engineering 2004, UWE, Bristol, UK): Oct 04 – Oct 05, co-supervision with Prof. N. Reeves (UQAM, Montreal, Canada) and Prof. A. Winfield (UWE, Bristol, UK); June 06 – Nov 06, direct supervision; Dec 06 – Oct 07, co-supervision with Prof. J. Huang (EPFL). Next employment: Postdoctoral Fellow at the Media and Design Laboratory (Prof. J. Huang, EPFL); current employment: Maître Assistant, University of Fribourg, Switzerland.

Ian Kelly (PhD in Cybernetics 1997, Reading University, Berkshire, UK): Jun 01 – Dec 02, co-supervision with Prof. J. Burdick (Caltech). Next employment: Senior Engineer at Fire Fighting Entreprises Ltd., Hertfordshire, UK.

Supervisor/co-Supervisor to *R&D Collaborators* (42)

R&D Engineers (13)

Emmanuel Droz (mechatronic engineer): Jun 10 – now.

Denis Rochat (system administrator and software engineer; part-time with SWIS/DISAL): Aug 03 – now.

Lucas Wälti (mechatronic engineer): Oct 20 – now.

Hugo Grall Lucas (mechatronic engineer): Aug 20 – Feb 21.

Guillaume Jornod (software engineer): Dec 15 – Mar 17. Next employment: PhD student at Volkswagen Group Research, Wolfsburg, Germany and at the Institute for Communications Technology, Technical University Braunschweig, Brunswick, Germany. Current employment: Expert 5G Mobile Communications for Digital Rail at DB Netz AG, Berlin, Germany.

David Mansolino (software engineer): Jun 13 – Mar 16. Next employment: software engineer at Cyberbotics Sàrl, Lausanne, Switzerland. Current employment: Automation Engineer Consultant at Expleo Group, currently at Bobst Inc., Morges, Switzerland.

Lorenzo Sarti (software engineer): Jun 14 – Jul 15. Next and current employment: software engineer at ecoRobotix Sàrl, Yverdon-les-Bains, Switzerland.

Christophe Paccolat (mechatronic engineer): Feb 13 – Apr 13. Next employment: Research Assistant at the Engineering Space Center, EPFL. Current employment: Research Associate at the Astronomical Institute of the University of Bern, Bern, Switzerland.

Yvan Bourquin (software engineer; part-time with SWIS/DISAL): Apr 06 – Dec 12. Next employment: full-time software engineer at Cyberbotics Sàrl, Lausanne, Switzerland. Current employment: Software Engineer at Pix4D SA, Prilly, Switzerland.

Pascal Gilbert (mechatronic engineer): May 08 – Nov 09. Next employment: mechatronic engineer at Kuerzi Avionics AG, Lommis, Switzerland. Current employment: Senior Engineer at Wingtra AG, Zurich, Switzerland.

Loïc Matthey (software engineer): Oct 08 – Dec 08. Next employment: PhD student at the Gatsby Computational Neuroscience Unit (Prof. P. Dayan) of the University College London. Current employment: Research Scientist at Deep Mind Inc., London, UK.

Xavier Raemy (mechatronic engineer): Jul 05 – Apr 07. Next employment: R&D electronic engineer at EndoArt SA (now part of Allergan Inc.), Ecublens, Switzerland. Current employment: Senior Research Engineer at SICPA Security Solutions SA, Prilly, Switzerland.

Olivier Michel (software engineer; part-time with SWIS): Sep 03 – Mar 06. Next and current employment: founder and full-time CEO of Cyberbotics Sàrl, Lausanne, Switzerland.

Pre-doctoral interns (18)

Cyrill Baumann (Oct 18 – Sep 19), Chiara Ercolani (Jul 18 – Sep 18), Anwar Quraishi (Nov 15 – Feb 16), Zeynab Talebpour (Nov 12 – Mar 13), Bahar Haghighat (Aug 12 – Nov 12), Miloš Vasić (Feb 12 – Aug 12), Adrian Arfire (Feb 10 – Sep 10), Ezequiel Di Mario (Nov 09 – Nov 10), Maria Boberg (Oct 09 – May 10), William C. Evans (Sep 09 – Feb 10), Albrecht Lindner (Apr 09 – Aug 09), S. Shravan K. Sajja (Aug 07 – Jan 09), Amanda Prorok (May 08 – Oct 08), Sven Adrian Goyal (May 08 – Oct 08), Grégory Mermoud (Apr 06 – Jun 06), Christopher Cianci (Jun 03 – Sep 03), Nikolaus Correll (Jun 03 – Sep 03), Jim Pugh (Aug 03 – Sep 03).

Civil service interns (11)

David Ballone (Mar 17 – Jul 17), Nicolas Bigler (Aug 13 – Dec 13), Ivan Ovinnikov (Mar 13 – Sep 13), Loïc Frund (Sep 12 – Feb 13), Christophe Paccolat (Aug 12 – Jan 13), Patrick Amstutz (Jul 12 – Dec 12), Benjamin Fankhauser (Feb 12 – Apr 12), Michael Minnig (Mar 11 – Dec 11), Michael Bonani (Sep 10 – Jan 11), Florian Vaussard (Aug 09 – Oct 10), Fabien Jordan (Mar 09 – Dec 09).

Advisor to Visiting PhD Students, Postdoctoral Scholars, and Scientists (22)

Visiting PhD students (11)

Xin-xing Chen: Sep 17 – Sep 18, hosted at DISAL, EPFL; PhD student, Huazhong University of Science and Technology, Wuhan, China.

José Manuel Palacios Gasòs: Apr 16 – Jun 16, hosted at DISAL, EPFL; PhD student, University of Zaragoza, Zaragoza, Spain.

Jalsan Khash-Erdene: Dec 10 – Sep 16, remote co-supervision with Dr. G. Feltrin; PhD student EMPA, Dübendorf, Switzerland.

Jnaneshwar Das: Jul – Aug 11, hosted at DISAL, EPFL; PhD student, University of Southern California, Los Angeles, CA, USA.

Valentin Longchamp: Aug 07 – Sep 10, remote co-supervision with Prof. F. Mondada; PhD student EPFL.

Masha Maghami: May 10 – Aug 10, hosted at DISAL, EPFL; PhD student, University of Central Florida, FL, USA.

Suman Kalyan Mandal: May 07 – Aug 07, hosted at SWIS, EPFL; PhD student, Texas A&M University, College Station, TX, USA.

Iñaki Navarro Oiza: Oct 06 – Mar 07, hosted at SWIS, EPFL; PhD student, Universidad Politécnica de Madrid, Spain.

Teodora Miteva: Sep 06 – Feb 07, hosted at SWIS, EPFL; PhD student, Bulgarian Academy of Sciences, Bulgaria.

Nidhi Kalra: Sep 05 – Dec 05, hosted at SWIS, EPFL; PhD student, Carnegie Mellon University, Pittsburgh, PA, USA.

Ling Li: Jun 01 – Sep 03, remote co-supervision with Prof. Y. Abu-Mostafa; PhD student Caltech.

Visiting postdoctoral scholars (3)

Alex Feldman: May 11 – Sep 12, hosted at DISAL, EPFL; postdoctoral fellow, University of Applied Sciences Western Switzerland, Yverdon, Switzerland.

Riccardo Falconi: Jul 08 – Dec 08 and Jul 09 – Sep 09, hosted at DISAL, EPFL; PhD student, University of Bologna, Italy. Jul 10 – Sep 10, hosted at DISAL, EPFL; postdoctoral fellow, University of Bologna, Italy.

Francesco Mondada: Jul 01 – Aug 01, hosted at CORO, Caltech; postdoctoral fellow, EPFL.

Visiting scientists (7)

Ali Marjovi: Apr 19 – now, hosted at DISAL, EPFL; senior researcher, AirVeraCity Sàrl.

Felix Schill: Jan 17 – Dec 20, hosted at DISAL, EPFL; senior researcher, Hydromea SA.

Alexander Bahr: Jan 15 – Dec 20, hosted at DISAL, EPFL; senior researcher, Hydromea SA.

Rodrigo Ventura: Sep 14 – Dec 14, hosted at DISAL, EPFL; assistant professor, IST Lisbon, Portugal.

Arnaud de la Fortelle: Feb 13 – Mar 13, hosted at DISAL, EPFL; Professor of Intelligent Transportation Systems, Director of the Robotics Center, Mines ParisTech, Paris, France.

Prithviraj Dasgupta: Jun 09 – Jul 09, hosted at DISAL, EPFL; Associate Professor of Computer Science, University of Nebraska, Omaha, USA.

Paul Flikkema: Jun 06 – Jul 06, hosted at SWIS, EPFL; Associate Professor of Electrical Engineering, Northern Arizona University, Flagstaff, USA. Jun 14 – Jul 14, hosted at DISAL, EPFL; Professor of Electrical Engineering, Northern Arizona University, Flagstaff, USA.

GRANTS AND CONTRACTS (61)

Current (3):

1. Schindler Inventio, industrial grant: *Robotic Inspection of Elevator Systems*. PI: A. Martinoli, total 150k CHF over 12 months, starting November 2020.
2. Mitsubishi Electric, industrial grant: *From Collective to Individual Behavior: A Multi-Level Modeling Approach for Control Optimization in Distributed Robotic Systems*. PI: A. Martinoli, total 450k CHF over 36 months, starting October 2018.

- Swiss NSF, basic research: *3DNoseNet – 3D Odor Distribution Mapping and Source Localization using a Heterogeneous Mobile Sensor Network in Realistic Environmental Conditions*. PI: A. Martinoli, total 610k CHF over 48 months, starting November 2017.

Completed (58):

- ENAC InnoSeed grant: *High-resolution Air Quality Mapping in Urban Settings*. PI: A. Marjovi, co-PI: A. Martinoli, total 25k CHF over 6 months, starting September 2018.
- Mitsubishi Electric, industrial grant: *Machine-Learning Algorithms for Distributed Robotic Systems*. PI: A. Martinoli, total 20k CHF over 3 months, starting January 2018.
- ENAC equipment call 2017: purchase of underwater robotic platforms. PI: A. Martinoli, co-PIs: S. Joost (ENAC-EPFL), T. Kohn (ENAC-EPFL), total 59k CHF for 2017.
- ENAC equipment call 2016: purchase of sensory equipment for intelligent vehicles. PI: A. Martinoli, total 16k CHF for 2016.
- Nano-Tera.ch Research Initiative, Strategic Action: *OpenSWISS – Development of an Air Quality Crowdsensing Platform*. PI: A. Martinoli, co-PI: K. Aberer, total 270k CHF (220k CHF for DISAL) over 24 months, starting November 2015.
- Swiss NSF, basic research: *3D Odor Source Localization Using a Heterogeneous Mobile Sensor Network*. PI: A. Martinoli, total 274k CHF over 25 months, starting October 2015.
- Swiss NSF, Sinergia: *A Flexible Underwater Distributed Robotic System for High-Resolution Sensing of Aquatic Ecosystems*. PI: A. Martinoli, co-PIs: A. J. Wüest (EPFL and EAWAG, Dübendorf), B. Ibelings (University of Geneva), total 1.68M CHF (830k CHF for DISAL) over 48 months, starting August 2015.
- EPFL Technical Transfer Office, Enabling Grant: *Development of an Underwater Relative Localization System*. PI: A. Martinoli, key personnel: F. Schill, total 25k CHF over 5 months, starting April 2015.
- FEEL Foundation: *Lake Ladoga: Life under the Ice. Interplay of Under-Ice Processes by Global Warming*. PI: N. Tofield-Pasche (EPFL), co-PIs: A. Martinoli, A. J. Wüest (EPFL, EAWAG), B. Ibelings (Uni GE), D. Ariztegui (Uni GE), B. Merminod (EPFL), C. Schubert (EAWAG), M.-E. Perga (INRA), total 1.2M CHF for 36 months (92k CHF for DISAL over 24 months), starting December 2014.
- Swiss NSF, basic research: *A Modeling and Control Methodological Framework for Self-Assembling Floating Miniature Robotic Systems*. PI: A. Martinoli, total 121k CHF over 36 months, starting November 2014.
- ENAC equipment call 2014: purchase of sensory equipment for gas detection and small-scale mobile robotic platforms. PI: A. Martinoli, co-PI S. Takahama (ENAC-EPFL), total 23k CHF for 2014.
- CTI, project with implementation partners: *RO2IVSim – A Flexible and Faithful Simulator for Bridging the Gap between Mobile Robots and Intelligent Vehicles*. PI: A. Martinoli, co-PI: O. Michel (Cyberbotics Sàrl), O. Pajot (PSA), total 176k CHF (176k CHF for DISAL) over 25 months, starting March 2014.
- CTI, project without implementation partners: *Hydromea – A Small-Size Scalable Multi-Robot System for Distributed Underwater Sampling*. PI: A. Martinoli, total 182k CHF over 10 months, starting March 2014.
- Nano-Tera.ch Research Initiative, RTD project: *OpenSense II – Crowdsourcing High-Resolution Air Quality Sensing*. PI: A. Martinoli, co-PIs: K. Aberer (EPFL), B. Faltings (EPFL), L. Thiele (ETHZ), A. Krause (ETHZ), L. Emmenegger (EMPA), Bochud M. (CHUV), Riediker M. (IST), total 1.78M CHF (325k CHF for DISAL) over 36 months, starting November 2013.
- European Commission, FP7 STREP: *AutoNet2030 – Cooperative Systems in Support of Networked Automated Driving by 2030*. PI: A. Amditis (ICCS, Athens, Greece), co-PIs: A. Martinoli, A. Kovacs (Broadbit, Komarno, Slovakia), R. Schubert (BASELABS, Chemnitz, Germany), R. Brignolo (Centro Ricerche Fiat, Orbassano, Italy), P. Degerman (SCANIA, Södertälje, Sweden), A. de la Fortelle (ARMINES, Paris, France), M. Lenardi (Hitachi Europe, Sophia Antipolis, France), G. Fettweis (TUD, Dresden, Germany), total 3.35M EUR (338k EUR for DISAL) over 36 months, starting November 2013.
- European Commission, FP7 STREP project: *MONarCH – Multi-Robot Cognitive Systems Operating in Hospitals*. PI: Joao Sequeira (IST, Lisbon, Portugal), co-PIs: A. Martinoli, Alessandro Saffiotti (Örebro

- University, Orebro, Sweden), Miguel Angel Salichs (University Carlos III, Madrid, Spain), Shimon Whiteson (University of Amsterdam, Amsterdam, Netherlands), Maria Filomena Pereira (IPO, Lisbon, Portugal), Marco Barbosa (SelfTech, Covilha, Portugal), Paulo Alvito (IdMind, Lisbon, Portugal), total 3.32M EUR (620k EUR for DISAL) over 38 months, starting February 2013.
20. Swiss NSF, basic research: *Design, Modeling, and Control Methodologies for Self-Assembling Floating Miniature Robotic Systems*. PI: A. Martinoli, total 149k CHF over 24 months, starting November 2012.
 21. Honeywell, industrial grant: *Detect and Avoid Systems for Unmanned and Manned Aviation*. PI: A. Martinoli, co-PIs: P. Fua (EPFL), D. Gillet (EPFL), total 770k CHF (230k CHF for DISAL) over 48 months, starting September 2012.
 22. PSA, industrial grant: *Networked Intelligent Vehicles with Adaptive Autonomy in Realistic Traffic Scenarios*. PI: A. Martinoli, total 347k CHF over 56 months, starting September 2012.
 23. NCCR-MICS, NCCR Transfer project: *Ultra Low-Power Wireless Camera Network for Agriculture Monitoring and Pest Attack Detection*. PI: A. Martinoli, co-PIs: M. Vetterli (EPFL), F. Ingelrest (SensorScope Sàrl), total 425k CHF (145k CHF for DISAL) over 30 months, starting June 2012.
 24. Nano-Tera.ch Research Initiative, Add-On grant to RTD project: *SELSYS+ – Fluidic-Mediated Self-Assembly for Hybrid Functional Micro/Nanosystems*. PI: J. Brugger, co-PIs: A. Martinoli, B. Nelson (ETHZ), N. D. Spencer (ETHZ), D. Poulidakos (ETHZ), C. Hierold (ETHZ), total 300k CHF (66k CHF for DISAL) over 24 months, starting June 2011.
 25. EMPA R&D project: *Distributed Mitigation of Wind-Induced Vibrations in Long-Span Bridges* PI: A. Martinoli, co-PI: G. Feltrin; total 80k CHF (40k CHF for DISAL) over 30 months, starting June 2011.
 26. NCCR Robotics: director D. Floreano (EPFL), deputy director R. Pfeifer (University of Zurich, Switzerland), project leaders A. Martinoli (*Distributed Robotics*), F. Iida (ETHZ, *Bio-Mimetic Sensing, Actuation, and Mobility*), A. Billard (EPFL, *Interaction and Manipulation*), J. R. Millán (EPFL, *Prosthetic Robotics*), F. Mondada (EPFL, *Robots for Daily Life*); further PIs: H. Bleuler (EPFL), P. Dillenbourg (EPFL), A. Ijspeert (EPFL), R. D’Andrea (ETHZ), R. Douglas (University of Zurich and ETHZ), R. Gassert (ETHZ), B. Nelson (ETHZ), R. Siegwart (ETHZ), R. Riener (ETHZ), L. Gambardella (IDSIA); total 13.3M CHF (720k CHF for DISAL) over 48 months, starting December 2010.
 27. Nano-Tera.ch Research Initiative, RTD project: *OpenSense – Open Sensor Networks for Air Quality Monitoring*. PI: Karl Aberer, co-PIs: A. Martinoli, B. Faltings (EPFL), M. Vetterli (EPFL), L. Thiele (ETHZ), total 2.31M CHF (489k CHF for DISAL) over 44 months, starting March 2010.
 28. Nano-Tera.ch Research Initiative, RTD project: *SELSYS: Fluidic-Mediated Self-Assembly for Hybrid Functional Micro/Nanosystems*. PI: J. Brugger, co-PIs: A. Martinoli, B. Nelson (ETHZ), N. D. Spencer (ETHZ), H. Wolf (IBM Research, Rueschlikon, Switzerland), H. Knapp (CSEM, Alpnach, Switzerland), and L. Sciboz (Icare Research Institute, Sierre, Switzerland), total 1.8 M CHF (344k CHF for DISAL) over 48 months, starting June 2009.
 29. NCCR Mobile Information and Communication Systems (MICS): *High Throughput UWB Localization for Mobile Robots*. PI: C. Botteron (EPFL), deputy PI: A. Martinoli, co-PIs: C. Dehollain (EPFL), Anja Skrivervik (EPFL), P.-A. Farine (EPFL), J.Y. Leboudec (EPFL), J. Farserotu (CSEM), S. Robert (HEIG-VD), total 1.17M CHF (277k CHF for DISAL) over 36 months, starting November, 2009.
 30. NCCR-MICS, NCCR Transfer project: *Tamperproof Monitoring Solution for Weather Risk Management*. PI: M. Vetterli, co-PIs: A. Martinoli, S. Ariarajah (SensorScope Sàrl), total 430k CHF (76k CHF for DISAL) over 2 years, starting November 2009.
 31. ETH Domain, Competence Center for Environment and Sustainability (CCES): *SwissEx – The Swiss Experiment*. PI: M. Lehning (SLF, Davos, Switzerland), co-PIs: A. Martinoli, M. Parlange (EPFL), K. Aberer (EPFL), M. Vetterli (EPFL), L. Thiele (ETHZ), O. Cirpka (EAWAG, Duebendorf, Switzerland), P. Burlando (ETHZ), E. Charbon (EPFL), L. Hurni (ETHZ), D. Faeh (ETHZ), J. Rhyner (SLF, Davos, Switzerland), A. Berne (EPFL), total 2.23M CHF (150k for CHF DISAL) over 48 months, starting September 2008.
 32. EMPA R&D project: *Distributed Mitigation of Wind-Induced Vibrations in Long-Span Bridges* and Gebert-Ruef Foundation: *Bridge of the Future*. PI: G. Feltrin (EMPA), co-PI: A. Martinoli; total 165k CHF (83k CHF for DISAL) over 36 months, starting January 2008.

33. Swiss NSF, junior professorship: *Design and Control of Swarm-Intelligent, Real-Time, Embedded Systems*. PI: A. Martinoli, total 431k CHF over 15 months, starting August 2007.
34. Swiss NSF, basic research: *Trajectory Analysis and Behavioral Identification in Mobile Robotic Systems*. PI: J. Jacot (EPFL), co-PIs: A. Martinoli; total 87k CHF (44k CHF for SWIS) over 22 months, starting January 2007.
35. EPFL, Integrated System Center: *Inkjet-Based Deposition of Micro/Nano-Objects on Functional Surfaces - Controlling and Exploiting Self-Assembly across Length-Scales*. PI: A. Martinoli, co-PI: J. Brugger, total 88k CHF (44k CHF for SWIS) over 16 months, starting September 2006.
36. NCCR-MICS: *Distributed Odor Source Localization using a Miniature Multi-Robot System*. PI: A. Martinoli; total 342k CHF over 48 months, starting November 2005.
37. Swiss NSF, junior professorship: *Design and Control of Swarm-Intelligent, Embedded Systems*. PI: A. Martinoli, total 1.46M CHF over 4 years, starting August 2003.
38. Swiss NSF, basic research: *Trajectory Analysis and Behavioral Identification in Multi-Robot Systems*. PI: J. Jacot (EPFL), co-PIs: A. Martinoli, Y. Lopez de Meneses (EPFL); total 82k CHF (41k CHF for SWIS) over 24 months, starting January 2005.
39. EPFL-ECAL Art & Science: *User-Driven Distributed Control of Collective Assembly Using Mobile, Networked, Miniature Robots*. PI: A. Martinoli, co-PIs: P. Keller (ECAL), C. Guignard (ECAL), total 40k CHF (20k CHF for SWIS) over 6 months, starting June 2006.
40. VRQ (Valorisation-Recherche Québec) and Hexagram (Institut de recherche et création en arts et technologies médiatiques): *Architectures informatiques et environnements variables*. PI: N. Reeves (UQAM, Montreal, Canada), co-PIs: A. Martinoli, G. Theraulaz (CNRS and UPS, Toulouse, France), A. Winfield (UWE, Bristol, UK), L. Courchesne (UQAM, Montreal, Canada), S. Roy (Université de Montréal, Canada), E. Bonabeau (Icosystems Inc., Boston, MA, USA); total 50k CAN\$ over 1 year, starting September 2005.
41. EPFL, Fonds d'Innovation pour la Formation (FIFO): *E-puck: robot mobile de table pour une éducation interdisciplinaire*. PI: F. Mondada (EPFL), co-PIs: A. Martinoli, R. Siegwart (EPFL), D. Floreano (EPFL), A. Schmid (EPFL); total 195k CHF (45k CHF for SWIS) over 12 months, starting May 2005.
42. METRANS Transportation Center: *Validation of sensory systems for intelligent vehicles*, PI: K. H. Grote (California State University, Long Beach), co-PI: E. K. Antonsson; external advisor: A. Martinoli; total \$72k over 18 months, starting January 2005.
43. EPFL, Fonds d'Innovation pour la Formation (FIFO): *Simulations Interactives en Robotique Mobile*. PI: A. J. Ijspeert (EPFL), co-PIs: A. Martinoli, D. Floreano (EPFL); total 136k CHF (18k CHF for SWIS) over 15 months, starting December 2004.
44. METRANS Transportation Center: *Evolution of Collective Sensory Systems for Intelligent Vehicles*, PI: K. H. Grote (California State University, Long Beach), co-PI: E. K. Antonsson; external advisor: A. Martinoli; total \$35k over 12 months, starting January 2004.
45. NASA Glenn Center: *Autonomous Robotic Inspection and Repair of Space Transportation and Exploration Systems*, PI: E. K. Antonsson (Caltech), external advisor: A. Martinoli; total \$25k over 3 months, starting August 2004.
46. NGC Foundation: *Co-Adaptation and Specialization in Mobile Sensor and Actuator Networks*, PI: E. K. Antonsson (Caltech), external advisor: A. Martinoli; total \$15k over 12 months, starting September 2003.
47. NASA Glenn Center: *Control and Design Methodologies for Groups of Miniature Autonomous Sensors and Actuators in Smart Propulsion Inspection Systems*. PI: J. Burdick (Caltech), co-PIs: A. Martinoli, E. Antonsson (Caltech); \$105k over 10 months, starting January 2003.
48. NASA, JPL Director's Research and Development Fund: *Collective Behavior of Biological Swarms: System Modeling, Analysis, and Algorithmic Development for Distributed Dynamic Resource Allocation Problems*. PI: P. Arabshahi (JPL, Pasadena, U.S.A.), co-PIs: M. Dickinson (Caltech), A. Martinoli, R. J. Marks II (University of Baylor, U.S.A.); \$200k over 12 months, starting June 2003.

49. Conseil de Recherche en Sciences Naturelles et en Génie and Conseil des Arts du Canada: *La sphere aux mascarillons: interactions évolutives entre automates virtuels et réels à intelligence distribuée*. PI: N. Reeves (UQAM, Montreal, Canada), co-PIs: L. Courchesne (UQAM, Montreal, Canada), A. Martinoli, and G. Theraulaz (CNRS and UPS, Toulouse, France); total 270k CAN\$ over 36 months, starting January 2003.
50. Hexagram Grant : *La sphere aux mascarillons: interactions évolutives entre automates virtuels et réels à intelligence distribuée*. PI: N. Reeves (UQAM, Montreal, Canada), co-PIs: L. Courchesne (UQAM, Montreal, Canada), A. Martinoli, and G. Theraulaz (CNRS and UPS, Toulouse, France); total 245k CAN\$ over 36 months, starting January 2003.
51. FP6 STREP project, Future and Emerging Technologies (FET) initiative: *Leurre: Artificial Life Control in Mixed-Societies*. PI: J.-L. Deneubourg (ULB, Bruxelles, Belgium), co-PIs: C. Rivault (University of Rennes 1, Rennes, France), G. Theraulaz (UPS, Toulouse, France), R. Siegwart (EPFL), sub-contractor: A. Martinoli; total 1.7M EUR (28k CHF for SWIS) over 36 months, starting September 2002.
52. TRW Foundation: *Specialization in Mobile Sensor and Actuator Networks*. PI: R. McEliece (Caltech), co-PI: A. Martinoli; total \$20k over 10 months, starting September 2002.
53. FQRSC (Fonds québécois de la recherche sur la société et la culture) Grant : *La sphere aux mascarillons: interactions évolutives entre automates virtuels et réels à intelligence distribuée*. PI: N. Reeves (UQAM, Montreal, Canada), co-PIs: L. Courchesne (UQAM, Montreal, Canada), A. Martinoli, and G. Theraulaz (CNRS and UPS, Toulouse, France); total 71k CAN\$ over 36 months, starting April 2002.
54. NSF Renewal Grant for the CNSE. PI: P. Perona (Caltech), A. Martinoli external co-Investigator with 12 other faculty; total \$3M/year for 3 years, 4th year 1.5 M, 5th year 0.75 M, starting January 2001.
55. Delphi-Delco Automotive Systems Grant: *Swarm Intelligence and Integrated Safety Systems*. PI: E. Antonsson (Caltech), co-PI: A. Martinoli; total \$65k over 24 months, starting January 2000.
56. TRW Foundation Grant: *Optimal Team Sensing and Acting via Distributed, Dynamical Allocation of Autonomous Robots*. PI: R. McEliece (Caltech), co-PI: A. Martinoli; total \$15k over 12 months, starting September 2001.
57. TRW Space & Technology Division Grant: *Swarm Sensing*. PI: E. Antonsson (Caltech), co-PI: A. Martinoli; total \$25k over 16 months, starting December 2000.
58. TRW Foundation Grant: *Optimal Task Allocation and Distributed Sensing in Collective Autonomous Robotics*. PI: R. M. Goodman (Caltech), co-PI: A. Martinoli; total \$20k over 12 months, starting September 2000.
59. ONR Grant: *Distributed Chemical Plume Tracing via Collective Autonomous Robotics*. PI: R. M. Goodman (Caltech); Key Personnel: A. Martinoli; total \$100k over 6 months, starting July 2000.
60. GIS “Sciences de la Cognition” Grant for *Intelligence collective dans les sociétés d’insectes et les systèmes artificiels*. PIs: G. Theraulaz (UPS, Toulouse, France), V. Fourcassié (UPS, Toulouse, France), co-PIs: E. Bonabeau (SFI, Santa Fe, NM), P. Kuntz (ENST-Bretagne, France), D. Snyers (ENST-Bretagne, France), J. D. Nicoud (EPFL), R. Siegwart (EPFL) ; Key Personnel: A. Martinoli ; total 35k CHF over 12 months, starting January 1999.
61. Swiss NSF, basic research: *A Methodology for Collective Robotics Design*. PI: J.-D. Nicoud (EPFL), co-PIs: L. M. Gambardella (IDSIA, Lugano, Switzerland), F. Mondada (EPFL); Key Personnel: A. Martinoli; total 240k CHF over 27 months, starting May 1997.

FELLOWSHIPS AND GRANTS ASSIGNED TO COLLABORATORS

Current (1)

IST-EPFL Joint Doctoral Program on Robotics, Brain, and Cognition; FCT fellowship assigned to Izzet Kağan Erünsal: *A model predictive approach for robust quadrotor formation control*; PhD thesis co-advised by A. Martinoli and R. Ventura (IST, Lisbon, Portugal), approximately 51k EUR for 48 months, starting September 2017.

Completed (6):

IST-EPFL Joint Doctoral Program on Robotics, Brain, and Cognition; FCT fellowship assigned to Alicja Wasik: *Institutional Robotics for Socially Aware Multi-Robot Systems*; PhD thesis co-advised by A. Martinoli and P. Lima (IST, Lisbon, Portugal), approximately 65k EUR for 48 months, starting November 2014.

IST-EPFL Joint Doctoral Program; FCT fellowship assigned to Duarte Dias: *Distributed Control of Autonomous Quadcopter Formations Using Exclusively Onboard Resources*; PhD thesis co-advised by A. Martinoli and P. Lima (IST, Lisbon, Portugal), approximately 65k EUR for 48 months, starting September 2012.

NCCR-MICS Spin Fund assigned to Alexander Bahr and Felix Schill: *Mapping Water Pollution using a Group of Affordable Robotic Submarines*; technological transfer project hosted at DISAL, total 120k CHF for 12 months, starting November 2011.

IST-EPFL Joint Doctoral Program; FCT fellowship assigned to Jorge Soares: *Cooperative Underwater Odor Source Localization*; PhD thesis co-advised by A. Martinoli, A. Pascoal (IST, Lisbon), and A. P. Aguiar (University of Porto, Portugal), approximately 65k EUR for 48 months, starting October 2010.

IST-EPFL Joint Doctoral Program; FCT fellowship assigned to José Nuno Pereira: *Advancing social interactions among robots: an institutional economics-based approach to distributed robotic systems*; PhD thesis co-advised by A. Martinoli and P. Lima (IST, Lisbon, Portugal), approximately 65k EUR for 48 months, starting January 2009.

American NSF fellowship assigned to Kjerstin Easton: *Distributed Building of Two-Dimensional Structures using Autonomous Robots*. Approximately \$100k for 36 months, starting July 2001.

PERSONAL HONORS

Finalist for Best Student Paper Award at the 15th International Symposium on Distributed Autonomous Robotic Systems, Kyoto, Japan, on-line organization, June 2021 for a contribution with A. Quraishi (<https://www.swarm-systems.com/dars-swarm2021>).

Finalist for Best Student Paper Award at the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, Madrid, Spain, October 2018 for a contribution with Z. Talebpour (<https://www.iros2018.org/>).

Best Poster Award and finalist for the Best Paper Award at the 13th Int. Symp. on Distributed Autonomous Robotic Systems, London, U.K., November 2016 for a contribution with F. Schill and A. Bahr and one with S. Roelofsen and D. Gillet, respectively (<http://dars2016.org/awards/>).

2016 Best Teacher Award of the Environmental Engineering Section, June 2016 (<https://teaching.epfl.ch/page-144308-en.html>).

Finalist for the CoTeSys Best Robotics Paper Award at the Ninth ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems, Toronto, Canada May 2010 for a contribution co-authored with G. Mermoud, L. Matthey, and W. C. Evans (http://www.cse.yorku.ca/AAMAS2010/#content=awards_list).

Finalist for Best Paper Award at the 10th International Symposium on Distributed Autonomous Robotic Systems, Lausanne, Switzerland, November 2010 (<http://dars2010.epfl.ch>) for a contribution co-authored with T. Lochmatter, E. Aydin and I. Navarro.

Best Paper Award at the 8th International Symposium on Distributed Autonomous Robotic Systems, Minneapolis, Minnesota, USA, July 2006 (<http://dars06.cs.umn.edu/>) for a contribution co-authored with N. Correll.

Finalist for Best Paper Award at the 8th International Symposium on Distributed Autonomous Robotic Systems, Minneapolis, Minnesota, USA, July 2006 (<http://dars06.cs.umn.edu/>) for a contribution with N. Kalra.

2006 Best Teacher Award of the Computer and Communication Sciences School assigned by the EPFL Student Association (Association Générale des Étudiants de l'École Polytechnique Fédérale de Lausanne, AGEPoly), April 2006.

Swiss National Science Foundation Young Investigator Award (4 years professorship), Bern, Switzerland, February 2003.

KiTi 2001 Prize for young Swiss-Italian researchers who have distinguished themselves in the field of science, art, or humanities, Bellinzona, Switzerland, September 2001.

Best poster of the Industry Day, Caltech, May 2000.

Santa Fe Institute Fellowship for the Complex System Summer School (4 weeks), Santa Fe, NM, June 1998.

Computer Science Department Prize, EPFL, for extraordinary research performances in the bio-tracking field, December 1996.

CSIC Fellowship for graduate student exchanges between CSIC and ETHZ (10 months), September 1993.

Aurel-Stodola Fellowship (ETHZ, 10 months) for graduate studies abroad, September 1993.

Prize of the I. and C. Lavezzari Foundation for the highest high school score at the Liceo Cantonale di Mendrisio (approximately 100 students) and 3rd rank at the Ticino State level (approximately 500 students), Chiasso Switzerland, June 1985.

HONORS ASSIGNED TO COLLABORATORS WITH PERSONAL INVOLVMENT

EDRS Thesis Distinction 2020 assigned to Alicja Wąsik (only 8% the about 15 theses produced by EDRS every year can receive a program distinction, therefore about one thesis per year).

Gilbert Hausmann Award 2019 assigned to Bahar Haghightat's PhD thesis (only about 2% the about 400 EPFL theses produced every year receive one of the seven possible recognitions for PhD theses).

EDRS Thesis Distinction 2018 assigned to Bahar Haghightat (only 8% the about 15 theses produced by EDRS every year can receive a program distinction, therefore about one thesis per year).

My Thesis in 180 Seconds (MT180) 2017 contest: 3rd place at the EPFL final achieved by Bahar Haghightat (the placement allows for qualification to the Swiss MT180 finals).

Luce Grivat Foundation Award assigned to Romain Emery for his master project "Performance Evaluation of Bio-Inspired Algorithms in Odor Source Localization", EPFL, October 2016.

ABB Award 2014 assigned to Amanda Prorok's PhD thesis (only about 2% the about 400 EPFL theses produced every year receive one of the seven possible recognitions for PhD theses).

Georges Giralt PhD Award 2013 finalist (2nd rank, 37 applications) assigned to Grégory Mermoud, co-winner of the publication award for his PhD Thesis as a volume of the Springer Tracts in Advanced Robotics series.

Best Poster Award (second rank) assigned to Grégory Mermoud at the NanoTera.ch Annual meeting 2011, Bern, Switzerland, May 2011.

Best Poster Award (third rank) assigned to William C. Evans, ENAC Research Day 2011, EPFL, June 2011.

Best Poster Award (third rank) assigned to Maria K. Boberg, ENAC Research Day 2010, EPFL, June 2010.

Student Travel Fellowship assigned to Grégory Mermoud for attending the Ninth ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems, Toronto, Canada, May 2010 (selection based on the submitted paper).

Student Travel Fellowship assigned to Grégory Mermoud for attending the Eighth ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems, Budapest, Hungary, May 2009 (selection based on the submitted paper).

Best poster award for the category Distributed and Mobile Robotics at the EPFL Research Day 2009 dedicated to Robotics assigned to Thomas Lochmatter, April 2009.

Finalist (runner-up placement) for the Best Poster award for the category Distributed and Mobile Robotics at the EPFL Research Day 2009 dedicated to Robotics for Grégory Mermoud, April 2009.

Annaheim Foundation Award assigned to Loïc Matthey for his master project "Hybrid Reaction Modeling of the Extended Self-Assembly Problem", EPFL, October 2008.

Innovation Award of the 2nd International Science Film Festival of Athens for the movie “Alice au pays des Cafards” by Jean-Pierre Gibrat (Trans Europe Film and ARTE France co-production), April 2007.

Best presentation award of the 2006 NCCR-MICS Scientific Conference assigned to Thomas Lochmatter, Zurich, October 2006, for his presentation on “Distributed Odor Localization”.

Student Travel Fellowship of the International Foundation of Robotics Research, sponsored by Ben Wegbreit, assigned to Nikolaus Correll at the 10th International Symposium on Experimental Robotics, Rio de Janeiro, Brazil, July 2006 (selection based on the submitted paper).

Second prize of the First EURON - Technology Transfer Award assigned to Olivier Michel for his robot simulator Webots; A. J. Ijspeert and A. Martinoli academic partners, March 2004.

SERVICE

Management, Steering, and Advisory Committees for Research, Teaching, and Innovation

2020 – now: *member of the scientific committee* of the EPFL Center for Intelligent Systems (CIS, <https://www.epfl.ch/research/domains/cis/>).

2019 – now: *member of the task force* for the re-organization of the EPFL mechatronic workshop network

2019 – now: *member of the teaching committee* for the re-organization of the environmental sciences and engineering curriculum at the master level (SIE section, EPFL)

2017 – 2018: *member of the teaching committee* for the re-organization of the environmental sciences and engineering curriculum at the bachelor level (SIE section, EPFL)

2016 – now: *member of the steering committee* for the ENAC mechanical workshop (PLTE, Plateforme Technique ENAC)

2015 – 2017: *member of the advisory board* for ecoRobotix Sàrl, Yverdon-les-Bains, Switzerland.

2012: *chair of the award committee* for the DARS 2012 best paper/best student paper awards

2011 – 2016: *study consultant* for environmental engineering students

2011 – 2013: *member of the working group* for interdisciplinary student activities (Teaching Bridge initiative)

2011 – 2012: *member of the EPFL Research Commission*

2010 – 2013: *member of the scientific committee* of the National Center of Competence in Research for Robotics (NCCR Robotics, <https://www.nccr-robotics.ch/>)

2009 – 2012: *member of the management committee* of the National Center of Competence in Research for Mobile Information and Communication Systems (NCCR-MICS, <https://www.mics.ch/>).

2009 – 2011: *member of the committee* for EPFL master fellowships of excellence

2009 – now: *member of the steering committee* of the EPFL Transportation Center (TRACE, <https://www.epfl.ch/research/domains/transportation-center/>).

2008 – 2010: *member of the technical advisory committee* for K-Team S.A., Vallorbe, Switzerland.

Organization and Steering Committees for Conferences and Workshops

2018 – now: *advisory board member* of the IEEE Technical Committee on Multi-Robot Systems.

2016 – now: *advisory board member* of the IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS).

2016: *technical co-chair* of the 13th International Symposium on Distributed Autonomous Robotic Systems (DARS), London, UK, November 2016 (see <http://dars2016.org/>).

2011: *steering committee member* for the Swarm Intelligence and Critical Behavior Workshop, Center for Interdisciplinary Research (ZiF), Bielefeld, Germany, March 2011 (see <http://www.uni-bielefeld.de/en/ZIF/AG/2011/03-22-Blanchard.html>).

2010 – now: *advisory committee member* of the International Symposium on Distributed Autonomous Robotic Systems (DARS).

2010: *general co-chair* for the 10th International Symposium on Distributed Autonomous Robotic Systems (DARS), Lausanne, Switzerland, November 2010 (see <http://dars2010.epfl.ch>).

2007 – 2009: *steering committee member* for the 2007 and 2009 International Conference on Robot Communication and Coordination.

2008: *steering committee member* for the special session on “From Biological Intelligence to Machine Intelligence: Abstraction, Evaluation, and Validation of Algorithm for Olfactory-based Navigation”, Seventh International Conference on Machine Learning and Applications, San Diego, December 2008 (see <https://www.icmla-conference.org/icmla08/>).

2006: *steering committee member* of the Workshop on Autonomous Computing in Smart Environments (3^{ème} cycle romand d’informatique), University of Fribourg, Fribourg, Switzerland, November 2006.

2006: *technical co-chair* of the 5th International Workshop on Ant Colony optimization and Swarm Intelligence, with the technical co-sponsorship of the IEEE Computational Intelligence Society, Brussels, Belgium, September 2006 (see <http://iridia.ulb.ac.be/ants2006/>).

2005: *general co-chair* of the 2nd IEEE Swarm Intelligence Symposium (SIS-05), sponsored by the IEEE Computational Intelligence Society with the technical co-sponsorship of the IEEE Communication Society and the IEEE Robotics and Automation Society, in cooperation with the Jet Propulsion Laboratory (JPL) and the International Society of Artificial Life, Pasadena, June 2005; see also https://disalw3.epfl.ch/miscellaneous/events_news/docs/IEEE-SIS05_report_conneCtIonS_August_2005.pdf for the official 1-page conference report appeared in the IEEE CIS Newsletter *conneCtIonS*, August 2005.

1995 – 1999: *general chair* of a quarterly workshop on autonomous robotics at the Swiss level (KRG, Khepera Research Group). Participants from EPFL, ETHZ, University of Zurich, University of Geneva, University of Fribourg, IDSIA Lugano, University of Neuchâtel.

Journal Editing

2008 –: *editorial board member* of the Swarm Intelligence Journal (<https://www.springer.com/journal/11721>)

2007 – 2008: *associate editor* for the Swarm Intelligence Journal

Doctoral Program Committees:

2016 – 2018: Director of the EPFL Doctoral Program in Robotics, Control, and Intelligent Systems (EDRS)

2012 – 2015: Director of the EPFL Doctoral Program in Manufacturing and Robotics (EDPR)

2009 – 2011: Committee of the EPFL Doctoral Program in Civil and Environmental Engineering (EDCE)

2000 – 2001: Committee of the Caltech Computation and Neural System Option (CNS)

Faculty Search and Evaluation Committees:

2020– 2021: EPFL-ENAC faculty search committee for human-centric emerging mobility.

2019 – 2020: EPFL-ENAC faculty search committee for emerging mobility and technology-aware transportation infrastructure

2018 – 2019: EPFL-ENAC faculty search committee for computational environmental sciences and engineering

2016 – 2017: EPFL-ENAC faculty search committee for indoor environmental quality and building controls

2016 – 2017: EPFL-ENAC faculty search committee for transportation systems

2015 – 2016: EPFL-ENAC faculty search committee for transportation systems and engineering

2015 – 2016: EPFL-ENAC faculty search committee for energy and building system engineering; comfort, health and building controls

2011: EPFL-ENAC faculty search committee for air quality engineering and atmospheric chemistry

2010 – now: ENAC progress evaluation committee for tenure-track assistant professors

2010 – 2011: EPFL-STI and NCCR Robotics faculty search committee for autonomous robotics

2009 – 2010: EPFL-STI faculty search committee for mechanical engineering (automatic control focus)

2008 – 2009: EPFL-ENAC faculty search committee for transportation engineering

Examination Committees:

2021: Served on one PhD candidacy committee (Zeki Erden, chair) and one PhD thesis committee at EPFL (Matin Macktoobian, expert).

2020: Served on three PhD candidacy committees (Ignacio Penas, expert; Lukas Huber, expert; Rafael Barmak, chair) at EPFL and two PhD thesis committees outside EPFL (Pierre Thalamy, Université Bourgogne Franche-Comté, expert; Thomas Wiedemann, University of Örebro, Sweden, opponent).

2019: Served on eight PhD candidacy committees (Enrica Soria, chair and expert; Hala Khodr, expert; Jauwairia Nasir, chair; Kevin Holdcroft, chair; Matthias Ruegg, expert; Pasquale Longobardi, expert; Vayos Papaspyros, chair; Yuejiang Liu, chair) at EPFL and one PhD thesis committee at EPFL (Mehmet Mutlu, expert).

2018: Served on two PhD candidacy committees (Atena Fadaeijouybari, chair; Zhengchao Wang, chair), three PhD thesis committees, two at EPFL (Mehran Khaghani, chair; Matthew Parkan, chair) and one outside EPFL (Fabrizio Schiano, University of Rennes, France, expert and reader).

2017: Served on three PhD candidacy committees (Murali Karnam, chair; Panayotis Danassis, chair; Frederike Dümbgen, expert) and three PhD thesis committees, two at EPFL (Frank Bonnet, chair; Nicolas Dousse, expert) and one outside (Eduardo Feo Flushing, USI Lugano, expert).

2016: Served on four PhD thesis committees, three at EPFL (Lucian Gheorghe, expert; Guillaume Sartoretti, chair; Ioannis Drakatos, chair) and one outside EPFL (Jawad Nagi, USI Lugano, expert).

2015: Served on two PhD candidacy committees (Mehmet Mutlu, chair; Cecile Cuchet, chair), one PhD thesis committee at EPFL (Meysam Basiri, chair).

2014: Served on four PhD candidacy committees (Mohammadreza Saeedmanesh, expert; Frank Bonnet, chair; Iliana Spartali, chair; Francisco Rego, expert; Mehran Kagani, expert; Cecile Cuchet, chair), one PhD thesis committee at EPFL (Stéphane Bonardi, expert), and one outside EPFL (Matteo Reggente, University of Örebro, Sweden, thesis pre-review).

2013: Served on six PhD candidacy committees (Guillaume de Chambrier, expert; Emily Hammes, chair; Lucian Gheorghe, chair; Artem Rozantsev, chair; Hadi Ardiny, chair; Iliana Spartali, chair) at EPFL and two PhD thesis committees, one at EPFL (Sebastian Gay, chair) and one outside EPFL (Andreas Breitenmoser, ETHZ, expert).

2012: Served on one PhD candidacy committee (Nicolas Dousse, expert) at EPFL, 1 Mid-Term PhD exam committee (Zichong Chen, expert) at EPFL, 1 PhD thesis committee (Zichong Chen, expert) at EPFL.

2011: Served on six PhD candidacy committees (Stéphane Bonardi, expert; Laleh Makarem, expert; Andrea Maesani, chair; Berker Agir, chair; Runwei Zhang, expert; Mohsen Ramezani, expert) at EPFL.

2010: Served on two PhD candidacy committees (Soha Pouya, expert; Pawel Lichocki, expert) at EPFL, 3 PhD thesis committees (Stéphane Magnenat, expert; Vitor Silva, chair; Alexander Sproewitz, chair) at EPFL, and two PhD thesis committees outside EPFL (Amos Brocco, University of Fribourg, Switzerland, expert; Marco Trincavelli, University of Örebro, Sweden, opponent).

2009: Served on two PhD thesis committees (Maxim Raya, chair; Abhishek Garg, expert) at EPFL and served on a PhD thesis committee outside EPFL (Riccardo Falconi, University of Bologna, expert).

2008: Served on five PhD thesis committees (Tuan-Viet Nguyen, chair; Ruben Merz, chair; Ludovic Righetti, chair; Adrian Waegli, expert; Maciej Kurant, chair) at EPFL, one Mid-Term PhD exam committee (Gunnar Schaefer, expert) at EPFL.

2007: Served on a PhD thesis committee (Didier Guzzoni, expert) at EPFL.

2006: Served on a PhD thesis committee (Masoud Asadpour, expert) and a PhD candidacy committee (Olivier Gallay, expert) at EPFL.

2005: Served on a PhD thesis committee (Jean-Christophe Zufferey, chair) at EPFL.

2004: Served on an Artificial Neural Network course examination committee, I&C school at EPFL.

2003: Served on two PhD Candidacy Committees (Alexandre Colot, Masoud Asadpour), one Mid-Term PhD Exam Committee (Norman U. Baier, expert) at EPFL.

2002: Served on a PhD Thesis committee (Cin-Young Lee), a PhD steering committee (William Agassounon), and a CNS PhD candidacy committee (Stephanie Chow) at Caltech.

2001: Served on two CNS PhD candidacy committees (Tracy Teal, Leila Reddy) at Caltech.

Proposal Reviewing for:

Swiss National Science Foundation, Belgian National Science Foundation (FNRS), UK Engineering and Physical Sciences Research Council, Council of Physical Sciences of the Netherlands Organization for Scientific Research, Natural Sciences and Engineering Research Council of Canada, EPFL internal grants, Hasler Foundation (Switzerland), Medical Research Foundation (France).

Book Reviewing for:

John Benjamins, John Wiley & Sons, MIT press.

Journal Reviewing:

High impact, multi-disciplinary: Science, Science Advances.

Robotics: Autonomous Robots, IEEE Robotics and Automation Letters, IEEE Trans. on Robotics, IEEE/ASME Trans. on Mechatronics, International Journal of Robotics Research, Robotics and Autonomous Systems, Robotica, Science Robotics.

Intelligent systems: Adaptive Behavior, Artificial Intelligence Journal, Artificial Life, IEEE Trans. on Evolutionary Computation, IEEE Trans. on Neural Networks, IEEE Trans. on Systems, Man, and Cybernetics (Part A, B, and C), IEEE Intelligent Systems, Interaction Studies: Social Behaviour and Communication in Biological and Artificial Systems, Connection Science, Nonlinear Dynamics, Journal of Systems Architecture, Swarm Intelligence.

Special Issues Editorial Boards:

Distributed Robots: From Fundamentals to Applications (Autonomous Robots, 2018), Swarm Robotics (Swarm Intelligence Journal, 2008), Swarm Robotics (Autonomous Robots, 2004), Ant Colony Optimization (IEEE Trans. on Evolutionary Computation, 2002), Biomimetic Robotics (Robotics and Autonomous Systems, 2000).

Conference Technical Program Committees (associate editor and reviewer roles):

Robotics: Distributed Autonomous Robotics Systems (DARS), IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), International Conference on Robot Communication and Coordination (ROBOCOMM), Robotics: Science and Systems Conference (RSS), SAB Swarm Robotics Workshop (SAB-SRW)

Intelligent systems: American Conference on Artificial Intelligence (AAAI), International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Artificial Life (ALife), International Conference on Swarm Intelligence (ANTS), IEEE Congress on Evolutionary Computation (CEC), European Conference on Artificial Life (ECAL), European Workshop on the application of Nature-inspired techniques to Telecommunication Networks and other Connected Systems (EvoCOMNet), International Conference on Machine Learning and Applications (ICMLA), IEEE International Symposium on Artificial Life (IEEE-ALife), International Conference on Genetic and Evolutionary Computation (GECCO), Intelligent Systems Symposium (ISS, part of World Congress on Computer Sciences and Information Engineering), IEEE International Symposium on Swarm Intelligence (SIS), International Joint Conference on Artificial Intelligence (IJCAI), International Conference on the Simulation of Adaptive Behavior (SAB).

2001: IROS

2002: ANTS

2003: AAMAS, IJCAI

2004: ALIFE, ANTS, DARS, GECCO, SAB-SRW

2005: ECAL, ICRA, SIS

2006: AAMAS, ANTS, DARS, ICRA, IROS, SAB, SAB-SRW, SIS

2007: Associated Editor for ICRA; AAAI, EvoCOMNet, IEEE Alife, SIS

2008: Associated Editor for ICRA; AAMAS, ANTS, DARS, EvoCOMNet, ICMLA, SAB, SIS

2009: Associated Editor for ICRA; AAMAS, CEC, IEEE Alife, ISS, ROBOCOMM, RSS, SIS

2010: AAMAS, ANTS, CEC, SAB

2011: Associated Editor for IROS

2012: DARS

From 2012 until 2017 included, committee and reviewing activities for conferences have been intentionally minimized due to heavy service activities as doctoral program director at EPFL (see section on doctoral program committees); when appropriate, they have been entirely outsourced to research collaborators.

2018: ANTS, DARS, IROS

2019: ICRA, RSS

2020: ICRA, IROS, ISER, RSS

2021: AAMAS, DARS, ICRA

2022: AAMAS

OUTREACHING ACTIVITIES

Media coverage

Tribune de Genève, “L’air est moins pollué à Genève, mais le flou persiste”, May 12-13, 2018, by Richard Étienne ; interview of Alcherio Martinoli urban air quality monitoring.

EPFL Magazine, “L’égalité des sexes au quotidien dans les labos. Paroles d’hommes”, April, 2018, by Sandy Evangelista ; interview of Alcherio Martinoli about gender equality in the lab and in daily life.

Swiss Italian Television LAI, Infonotte, October 31, 2017, by Alessandro Chiara; interview of Alcherio Martinoli about intelligent vehicles.

EPFL Press Release, “Two intelligent vehicles are better than one”, by Anne-Muriel Brouet, Alain Herzog, and Olivier Porchet, October 2017, <https://actu.epfl.ch/news/two-intelligent-vehicles-are-better-than-one-5/>. The news has been picked up and reported by several specialized on-line magazines and blogs, including ScienceDaily, Communications of the ACM, R&D Magazine, Science Newslines, Science X, Engadget, Kurzweil Accelerating Intelligence. This cooperative perception project will be also briefly highlighted in the EPFL annual report 2017.

Schweizer Familie, “Forschen für eine gute Zukunft”, by Daniel Ganzfried and Stephan Rappo, July 2017, No. 30-31, pp. 22-31; coverage of DISAL research activities about intelligent vehicles.

Bilanz, “Wir sind die Roboter”, by Philipp Albrecht and Florence Vuichard, July 2017, No. 7, pp. 100-107; coverage of DISAL research activities.

Euronews, Futuris series, “How technology is bringing us closer to driverless cars”, March 2017, by Denis Loctier; short coverage about the FP7 European project AutoNet2030. Additional information about the project and its media coverage can be found here: <http://www.autonet2030.eu/>.

EPFL Press Release, “With or without a driver, vehicles are able to cooperate”, by Anne-Muriel Brouet, Alain Herzog, and Olivier Porchet, January 2017, <https://actu.epfl.ch/news/with-or-without-a-driver-vehicles-are-able-to-co-8/>. The news has been picked up and reported by a long list of magazines, newspapers, and specialized blogs including the *Neues Zürcher Zeitung*, *24 heures*, *Lausanne Cité*, *Wiener Zeitung*, *Traffic Technology Today*, *Engadget*, *Swiss Cleantech*, *Daimler next magazine*. Guillaume Jornod and Alcherio Martinoli have interviewed with multiple radio stations on the subject including the *Radio Television Suisse (RTS)*.

IEEE Spectrum, Robotics blog “Video Friday”, October 2016, by Erico Guizzo and Evan Ackerman; IROS 2016 video and related paper by Alicja Wasik featured as the first one on the blog.

Le Matin Dimanche, “Les voitures autonomes ne voient pas toutes avec les mêmes yeux”, by Ivan Radja, September 2016, p. 33, interview of Alcherio Martinoli about intelligent vehicles.

Swiss French Television RTS1, *RTS Info le 19h30* (main daily news event), “VD: des bénévoles participent à une étude sur la pollution urbaine à Lausanne”, July 5, 2016, by P. Defrance; short coverage about the *NanoTera.ch* project *OpenSense II* (Lausanne deployment).

Euronews, *Futuris* series, “My Robot, my Friend”, March-April 2016, by Julián López Gómez; short coverage about the FP7 European project *MONARCH*. Additional information about the project and its media coverage can be found here: <http://monarch-fp7.eu/>.

The Lift Conference, panel discussion on *Data Canvas: Sense Your City*, February, 2015, Geneva, Switzerland; participation of Adrian Arfire for the *OpenSense* project.

Nature, “Nature's 10: Ten people who mattered this year”, by Lok Corie, December 2014, Vol. 516, p. 314; interview of Alcherio Martinoli about research activities of Prof. Radhika Nagpal (Harvard University).

Planète Bleue (magazine of the *Transports publics de la Région Lausannoise*), “Les bus aident aussi à mesurer la qualité de l’air”, July 2014, by C. Epars, no. 59, p.19, short article about the *NanoTera.ch* project *OpenSense*.

Communications of the ACM, “Rise of the Swarm”, by Gregory Mone, March 2013, Vol. 56, No. 3, pp. 16-17; interview of Alcherio Martinoli about swarm robotics.

Swiss Italian Television LA1, *Telegiornale* (main daily news event), February 3, 2013, by Massimo Isotta; interview of Alcherio Martinoli and Francesco Mondada with a short movie about *DISAL* and *LSRO* research activities.

Radio Suisse Romande la Première, “Impatience” by Nancy Ypsilantis, August 24, 2010; interview of Thomas Lochmatter on the *NCCR-MICS Distributed Odor Localization* project by Sarah Dirren.

Comptoir Suisse 2008, September 2008: showcasing of *DISAL* activities in the area of intelligent transportation systems (driving assistance systems), EPFL stand organized by the EPFL Transportation Center).

New Scientist, top 5 technological videos of 2007: one of the video of the FP6 European project *Leurre* has been ranked #3.

Media attention as follow-up of the *Science* paper reporting on key results generated in the framework of the FP6 European project *Leurre*; the article has been highlighted also on the main web page of *Nature* and in the “News of the Week” section of the same *Science* number.

National Geographic, “Swarm Theory”, by Peter Miller, July 2007, pp. 126-147; coverage of *SWIS* research activities in swarm robotics.

SNSF Newsletter Horizons/Horizonte, “Tracer une odeur à l’aide d’une armada de robots”/ “Kommunikative Roboter mit Feiner Nase”, by Florence Luy, December 2006, Nr. 71, p. 6.

SNSF Press Release and Image of the Month, the project “Distributed Odor Localization” sponsored by the *NCCR-MICS* has been selected by the Swiss National Science Foundation as project of the month, December 2006. The news has been picked up and reported by a long list of magazines and newspapers (paper or on-line version) including the *Neues Zürcher Zeitung*, *Tagesanzeiger*, *Basler Zeitung*, *24 heures*, *Le Soir*, *20 minutes*, and *Walliser Bote*.

Festival Pariscience, public projection of the movie “Alice au pays des Cafards” by Jean-Pierre Gibrat (Trans Europe Film and ARTE France co-production) and public discussion with the Board of Directors of the European Research Commission about the *Leurre* project, Paris, October 12-13, 2006.

Scientific Computing, “New SWIS Army: Developing Collective Intelligence”, by William L. Weaver, July 2006, Vol. 23, No. 8, p. 14.

ARTE TV, “Alice au pays des Cafards” by Jean-Pierre Gibrat (Trans Europe and ARTE France co-production), movie about the FP6 European project *Leurre*, June 25, 2006. Note this is the first European project whose activities have been summarized in a full-length movie.

Discovery Channel (Canada), “Is it just me, or does my blimp look funny to you?”, short coverage about the Mascarillons project, October 25, 2005.

Science et Cité 2005, 10 days non-stop exhibition of a turbine inspection experiment using 40 miniature robots Alices II (N. Correll stand leader), Espace Arlaud, Lausanne, Switzerland, May 20-29, 2005.

Sciensationel, “L’intelligence collective des robots”, by Jean-Blaise Held, 5: 1, May 2005.

L’agefi, Business and finance newspaper of the Swiss French Region, “La lausannoise Cyberbotics s’offre le marché américain”, by Sylvie Gardel, December 23, 2004.

Media attention through the FP6 European project *Leurre*, see <http://leurre.ulb.ac.be/> for a full list of coverage in newspapers and television, December 2004.

Swiss Italian National Radio, “Robot come Formiche”, by Mirella de Paris, October 15, 2004.

Fraunhofer Magazin, “Gemeinsam Schlau”, by Birgit Niesing, 2004, Issue 3, pp. 54-55.

Swiss NSF yearly report 2003, images by Aldo Ellena, 2003, pp. 26-27.

IEEE Intelligent Systems, “Nature's Guide to Robot Design”, by Danna Voth, November/December 2002, pp. 4-6.

New York Times TV for the *National Geographic Channel*, “Bio-Inspiration”, by Mark Trottenberg, September 10, 15, and 17, 2002.

BBC Radio, “Leading Edge” by Geoff Watts, life interview on Swarm Robotics, December 6, 2001.

IEEE Intelligent Systems, “Choosing Robots for Teaching: Growing Number of Products Available” by Sara Reese Hedberg, January/February 2001, pp. 2-7.

Rubin Tarrant Productions, Coverage of collective robotics experiments and personal interview by John Rubin, January 2001.

L’Usine Nouvelle, “Les fourmis au secours de la robotique collective” by Arnaud Boulben, November 2000, pp. 68-69.

Pour la Science, “Intelligence en essaim”, by Éric Bonabeau and Guy Théraulaz, May 2000, No. 271, pp. 66-73.

France 3, Special issue of “Nimbus” on autonomous robots, coverage of collective robotics experiments and personal interview, June 1999.

NTT-ICC Exhibition, 2 months permanent demonstration of the Stick Pulling experiment (A. J. Ijspeert, A. Martinoli) organized by Takashi Gomi, Tokyo Opera House, Japan, January 29 – March 22, 1999.

Technik Aktuell, “Mobile Robotik: Bioroboter mit komplexer künstlicher Intelligenz” by Elizabeth Heinzlmann, October 1998, No. 10, pp. 42-45.

Active participation to outreach events (involving broad scientific audience or public)

Regular events:

School Research Days (posters and demonstrations): 2004 (School of Computer and Communication Sciences, IC), 2005 (IC and EPFL), 2006 (IC), 2007 (IC), 2008 (IC and EPFL), 2009 (EPFL, focus on robotics), 2010 (School of Architecture, Civil, and Environmental Engineering, ENAC), 2011 (ENAC), 2012 (ENAC), 2016 (ENAC including a plenary talk by A. Martinoli), 2017 (ENAC).

Highschool Days (posters, short talks, and demonstrations): 2005 (IC and Information Day about the Swiss Institutes of Technology at the Liceo di Lugano 1), 2006 (IC), 2009 (ENAC), 2010 (ENAC), 2011 (ENAC), 2012 (ENAC), 2013 (ENAC), 2014 (ENAC), 2015 (ENAC), 2016 (ENAC), 2017 (ENAC), 2018 (ENAC), 2019 (ENAC)

Peculiar events:

2019: EPFL Open Days, 50th Anniversary of EPFL (September, DISAL booth with demonstrations).

2017: NanoTera.ch annual meeting (EPFL, March, showcase of research activities of the NT project OpenSense II and other NT projects with environmental applications with talk)

2016: NanoTera.ch annual meeting (EPFL, April, showcase of research activities of the NT project OpenSense II with talk, posters and demos); EPFL Open Days (November, DISAL booth with demonstrations)

2015: NanoTera.ch annual meeting (Bern, May, showcase of research activities of the NT project OpenSense II with talk, posters and demos)

2014: NanoTera.ch annual meeting (Bern, May, showcase of research activities of the NT project OpenSense II with talk, posters and demos)

2013: EPFL Robotics Festival (April, DISAL booth with demonstrations); NanoTera.ch annual meeting (Bern, May 2013, showcase of research activities of the NT projects OpenSense and SelfSys with talk, posters and demos)

2012: EPFL Robotics Festival (May, DISAL booth with demonstrations); NanoTera.ch annual meeting (Zurich, April 2012, showcase of research activities of the NT projects OpenSense and SelfSys with posters and demos)

2011: EPFL Robotics Festival (May, DISAL booth with demonstrations); NanoTera.ch annual meeting (Bern, May 2011, showcase of research activities of the NT projects OpenSense and SelfSys with posters and demos)

2010: EPFL Robotics Festival at the EPFL Open Days event (May, DISAL booth with demonstrations); Nuit de la Science, (Geneva, July, DISAL booth with demonstrations); Latsis Symposium 2010 (ETHZ, November 2010, showcase of research activities of the CCES project SwissEx with posters); NanoTera.ch annual meeting (Bern, April, showcase of research activities of the NT projects OpenSense and SelfSys with posters and demos)

2009: EPFL Robotics Festival (May, DISAL booth with demonstrations)

2007: IC Summer Research Institute (hosted 3 academic guests)

2005: IC Summer Research Institute (hosted 3 academic guests), inauguration ceremony of the BC building on the EPFL campus (April, posters and demos)

2004: IC Summer Research Institute (hosted 1 academic guest)

PUBLICATIONS

Remark: Most of the publications are available in downloadable preprint format at <https://infoscience.epfl.ch/>.

Peer-Reviewed Journal Papers (37)

1. Baumann C. and Martinoli A., "A Modular Functional Framework for the Design and Evaluation of Multi-Robot Navigation", *Robotics and Autonomous Systems*, 144: 103849 (12 pages), 2021.
2. Chen X., Marjovi A., Huang J., and Martinoli A., "Particle Source Localization with a Low-Cost Robotic Sensor System: Algorithmic Design and Performance Evaluation", *IEEE Sensors Journal*, 20(21): 13074-13085, 2020.
3. Wasik A., Lima P. U., and Martinoli A., "A Robust Localization System for Multi-Robot Formations Based on an Extension of a Gaussian Mixture Probability Hypothesis Density Filter". Special issue on Multi-Robot and Multi-Agent Systems, Aynan N., Robuffo Giordano P., Fitch R., Franchi A., and Sabattini L., editors, *Autonomous Robots*, 44:395-414, 2020.
4. Haghghat B., Khodr H., and Martinoli A., "Lightweight Physics-Based Models for the Control of Fluid-Mediated Self-assembly of Robotic Modules", *Robotics and Autonomous Systems*, 121: 103241 (12 pages),

2019. Special issue on Distributed Autonomous Robotic Systems, Correll N., Schwager M., and Ota J., editors. Invited paper (competitive selection based on DARS 2018 published papers).
5. Talebpour Z. and Martinoli A., “Adaptive Risk-Based Replanning For Human-Aware Multi-Robot Task Allocation with Local Perception”, *IEEE Robotics and Automation Letters*, 4(4): 3790-3797, 2019.
 6. Rahbar F., Marjovi A., and Martinoli A., “Design and Performance Evaluation of an Algorithm Based on Source Term Estimation for Odor Source Localization”, *Sensors*, 19(3): 656 (21 pages), 2019.
 7. Haghighat B. and Martinoli A., “Automatic synthesis of rulesets for programmable stochastic self-assembly of rotationally symmetric robotic modules”, *Swarm Intelligence Journal*, 11(3-4): 243-270, 2017.
 8. Haghighat B., Mastrangeli M., Mermoud G., Schill F., and Martinoli A., “Fluid-Mediated Stochastic Self-Assembly at Centimetric and Sub-Millimetric Scales: Design, Modeling, and Control”. Special issue on Building by Self-Assembly, Mastrangeli M., editor, *Micromachines*, 7(8): 138 (23 pages), 2016.
 9. Mastrangeli M., Martinoli A., and Brugger J., “Three-Dimensional Polymeric Microtiles for Optically-Tracked Fluidic Self-Assembly”, *Microelectronic Engineering*, 124: 1–7, 2014.
 10. Di Mario E. and Martinoli A., “Distributed Particle Swarm Optimization for Limited Time Adaptation with Real Robots”. Special issue on Distributed Autonomous Robotic systems, Chirikjian G., editor, *Robotica*, 32(2): 193-208, 2014. Invited paper (competitive selection based on DARS 2014 published papers).
 11. Prorok A. and Martinoli A., “Accurate Indoor Localization with Ultra-Wideband using Spatial Models and Collaboration”. Special issue on Experimental Robotics, Desai J., Dudek G., Khatib O. and Kumar V., editors, *Int. Journal of Robotics Research*, 33(4): 547-568, 2014. Invited paper (competitive selection based on ISER 2012 published papers).
 12. Pereira J.N., Silva P., Lima P. U., and Martinoli A., “Formalization, Implementation, and Modeling of Institutional Controllers for Distributed Robotic Systems”. Special issue on Artificial Life Research in Europe, Lenaerts T. and Giacobini M., editors, *Artificial Life*, 20(1): 127-141, 2014.
 13. Goldowsky J., Mastrangeli M., Jacot-Descombes L., Gullo M. R., Mermoud G., Brugger J., Martinoli A., Nelson B. J., Knapp H. F., “Acousto-Fluidic System Assisting In-Liquid Self-Assembly of Microcomponents”. *Journal of Micromechanics and Microengineering*, 23: 125026 (11pp), 2013.
 14. Jacot-Descombes L., Martin-Olmos C., Gullo M. R., Cadarso V. J., Mermoud G., Villanueva L. G., Mastrangeli M., Martinoli A., and Brugger J., “Fluid-Mediated Parallel Self-Assembly of Polymeric Micro-Capsules for Liquid Encapsulation and Release”. *Soft Matter*, 9: 9931-9938, 2013.
 15. Mastrangeli M., Mermoud G., and Martinoli A., “Modeling Self-Assembly Across Scales: The Unifying Perspective of Smart Minimal Particles”. Special issue on Self-Assembly, Böhringer K. F. and Elwenspoek M. editors, *Micromachines*, 2(2): 82-115, 2011.
 16. Correll N. and Martinoli A., “Modeling and Designing Self-Organized Aggregation in a Swarm of Miniature Robots”. Special issue on Stochasticity in Robotics and Biological Systems, Asada H. H. and Kumar V. editors, *Int. Journal of Robotics Research*, 30(5): 615-626, 2011.
 17. Prorok A., Correll N., and Martinoli A., “Multi-level Spatial Modeling for Stochastic Distributed Robotic Systems”. Special issue on Stochasticity in Robotics and Biological Systems, Asada H. H. and Kumar V. editors, *Int. Journal of Robotics Research*, 30(5): 574-589, 2011.
 18. Pugh J. and Martinoli A., “Distributed Scalable Multi-Robot Learning using Particle Swarm Optimization”. *Swarm Intelligence Journal*, 3(3): 203-222, 2009.
 19. Rutishauser S., Correll N., and Martinoli A., “Collaborative Coverage using a Swarm of Networked Miniature Robots”. *Robotics and Autonomous Systems*, 57(5): 517-525, 2009.
 20. Pugh J., Raemy X., Favre C., Falconi R., and Martinoli A., “A Fast On-Board Relative Positioning Module for Multi-Robot Systems”. Special issue on Mechatronics in Multi-Robot Systems, Chow M.-Y., Chiaverini S., Kitts C., editors, *IEEE Trans. on Mechatronics*, 14(2): 151-162, 2009.
 21. Correll N. and Martinoli A., “Multi-Robot Inspection of Industrial Machinery: From Distributed Coverage Algorithms to Experiments with Miniature Robotic Swarms”. *IEEE Robotics and Automation Magazine*, 16(1): 103-112, 2009.

22. Amstutz P., Correll N., and Martinoli A., "Distributed Boundary Coverage with a Team of Networked Miniature Robots using a Robust Market-Based Algorithm". Special issue on Multi-Robot Coverage, Search, and Exploration, Kaminka G. A. and Shapiro A., editors, *Annals of Mathematics and Artificial Intelligence*, 52(2-4): 307-333, 2009.
23. Fakhfour V., Mermoud G., Kim J. Y., Martinoli A., and Brugger J., "Drop-On-Demand Inkjet Printing of SU-8 Polymer". *Micro and Nanosystems*, 1: 63-67, 2009.
24. Zhang Y., Antonsson E. K., and Martinoli A., "Evolutionary Engineering Design Synthesis of On-Board Traffic Monitoring Sensors". *Research in Engineering Design*, 19(2-3): 113-125, 2008.
25. Winfield A. F. T., Liu W., Nembrini J., and Martinoli A., "Modelling a Wireless Connected Swarm of Mobile Robots. Special issue on Swarm Robotics, Winfield A. F. T. and Sahin E., editors, *Swarm Intelligence Journal*, 2(2-4): 241-266, 2008.
26. Halloy J., Sempo G., Caprari G., Rivault C., Asadpour M., Tâche F., Saïd I., Durier V., Canonge S., Amé J.M., Detrain C., Correll N., Martinoli A., Mondada F., Siegwart R. R., and Deneubourg J. L. "Social integration of robots in groups of cockroaches to control self-organized choices". *Science*, 318(5853): 1155-1158, 2007.
27. Agassounon W., Martinoli A., and Easton K., "Macroscopic Modeling of Aggregation Experiments using Embodied Agents in Teams of Constant and Time-Varying Sizes". Special issue on Swarm Robotics, Dorigo M. and Sahin E., editors, *Autonomous Robots*, 17(2-3): 163-192, 2004.
28. Kelly I. D. and Martinoli A., "A Scalable, On-Board Localisation and Communication System for Indoor Multi-Robot Experiments". Special issue on Sensor Simulation and Smart Sensors, Loughlin C., editor, *Sensor Review*, 24(2): 167-180, 2004. Invited paper.
29. Li L., Martinoli A., and Abu-Mostafa Y., "Learning and Measuring Specialization in Collaborative Swarm Systems". Special issue on Mathematics and Algorithms of Social Insects, Balch T. and Anderson C., editors, *Adaptive Behavior*, 12(3-4):199-212, 2004. Invited paper (competitive selection based on MASI 2003 published papers).
30. Martinoli A., Easton K., and Agassounon W., "Modeling of Swarm Robotic Systems: A Case Study in Collaborative Distributed Manipulation". Special Issue on Experimental Robotics, Siciliano B., editor, *Int. Journal of Robotics Research*, 23(4): 415-436, 2004. Invited paper (competitive selection based on ISER 2004 published papers).
31. Hayes A. T., Martinoli A., and Goodman R. M., "Swarm Robotic Odor Localization: Off-Line Optimization and Validation with Real Robots". Special issue on Biological Robotics, McFarland D., editor, *Robotica*, 21(4): 427-441, 2003. Invited paper.
32. Hayes A. T., Martinoli A., and Goodman R. M., "Distributed Odor Source Localization". Special Issue on Artificial Olfaction, Nagle H. T., Gardner J. W., and Persaud K., editors, *IEEE Sensors Journal*, 2(3): 260-271, 2002.
33. Lerman K., Galstyan A., Martinoli A., and Ijspeert A. J., "A Macroscopic Analytical Model of Collaboration in Distributed Robotic Systems". *Artificial Life*, 7(4): 375-393, 2001.
34. Ijspeert A. J., Martinoli A., Billard A., and Gambardella L. M., "Collaboration through the Exploitation of Local Interactions in Autonomous Collective Robotics: The Stick Pulling Experiment". *Autonomous Robots*, 11(2): 149-171, 2001.
35. Freitag A., Martinoli A., and Urzelai J., "Monitoring the Feeding Activity of Nesting Birds with an Autonomous System: The Case Study of the Endangered Wryneck *Jynx Torquilla*". *Bird Study*, 48(1): 102-109, 2001.
36. Billard A., Ijspeert A. J., and Martinoli A., "A Multi-Robot System for Adaptive Exploration of a Fast Changing Environment: Probabilistic Modelling and Experimental Study". Special Issue on Adaptive Robots, Torras C., editor, *Connection Science*, 11(3-4): 359-379, 1999.
37. Martinoli A., Ijspeert A. J., and Mondada F., "Understanding Collective Aggregation Mechanisms: From Probabilistic Modelling to Experiments with Real Robots". Special issue on Distributed Autonomous Robotic Systems, Dillmann R., Lüth T., Dario P., and Wörn H., editors, *Robotics and Autonomous Systems*, 29(1): 51-63, 1999. Invited paper (competitive selection based on DARS 1998 published papers).

Peer-Reviewed Conference/Symposium/Workshop Papers (173)

1. Quraishi A. and Martinoli A., “Online Kinematic and Dynamic Parameter Estimation for Autonomous Surface and Underwater Vehicles”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September-October 2021, Prague, Czech Republic. To appear.
2. Quraishi A. and Martinoli A., “Coordinated Path Planning for Surface Acoustic Beacons for Supporting Underwater Localization”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September-October 2021, Prague, Czech Republic. To appear.
3. Quraishi A. and Martinoli A., “Nominated finalist for th Distributed Cooperative Localization with Efficient Pairwise Range Measurements”, *Proc. of the 15th International Symposium on Distributed Autonomous Robotic Systems*, June 2021, Kyoto, Japan, online organization. Nominated finalist for the Best Student Paper Award. To appear.
4. Hirayama M., Wasik A., Kamezaki M., and Martinoli A., “Robust Localization for Multi-Robot Formations: An Experimental Evaluation of an Extended GM-PHD Filter”, *Proc. of the 15th International Symposium on Distributed Autonomous Robotic Systems*, June 2021, Kyoto, Japan, online organization. To appear.
5. Erusal I. K., Ventura R., and Martinoli A., “Nonlinear Model Predictive Control for Formations of Multi-Rotor Micro Aerial Vehicles: An Experimental Approach”, *Proc. of the 17th Int. Symp. on Experimental Robotics*, 2021, Malta; Springer Proceedings in Advanced Robotics (2021), Vol. 19, pp. 449-461.
6. Ercolani C. and Martinoli A., “3D Odor Source Localization using a Micro Aerial Vehicle: System Design and Performance Evaluation”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2020, Las Vegas, NV, USA, online organization, pp. 6194-6200.
7. Rahbar F. and Martinoli A., “A Distributed Source Term Estimation Algorithm for Multi-Robot Systems”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May-August 2020, Paris, France, online organization, 5604-5610.
8. Quraishi A., Bahr A., Schill F., and Martinoli A., “A Flexible Navigation Support System for a Team of Underwater Robots”, *Proc. of the Int. Symp. on Multi-Robot and Multi-Agent Systems*, August 2019, New Brunswick, USA, pp. 70-75.
9. Quraishi A., Bahr A., Schill F., and Martinoli A., “Easily Deployable Underwater Acoustic Navigation System for Multi-Vehicle Environmental Sampling Applications”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May 2019, Montreal, Canada, pp. 3464-3470.
10. Rahbar F., Marjovi A., and Martinoli A., “An Algorithm for Odor Source Localization based on Source Term Estimation”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May 2019, Montreal, Canada, pp. 973-979.
11. Haghighat B., Khodr H., and Martinoli A., “Design and Calibration of a Lightweight Physics-Based Model for Fluid-Mediated Self-Assembly of Robotic Modules”, *Proc. of the 14th Int. Symp. on Distributed Autonomous Robotic Systems*, October 2018, Boulder, U.S.A.; Springer Proceedings in Advanced Robotics (2019), Vol. 9, pp. 197-210.
12. Talebpour Z. and Martinoli A., “Risk-Based Human-Aware Multi-Robot Coordination in Dynamic Environments Shared with Humans”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2018, Madrid, Spain, pp. 3365-3372. Nominated finalist for the Best Student Paper Award.
13. Ruddick J., Marjovi A., Rahbar F., and Martinoli A., “Design and Performance Evaluation of an Infotaxis-Based Three-Dimensional Algorithm for Odor Source Localization”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2018, Madrid, Spain, pp. 1413-1420.
14. Wasik A., Tomic S., Alessandro Saffiotti A., Pecora F., Martinoli A., and Lima P. U., “Towards Norm Realization in Institutions Mediating Human-Robot Societies”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2018, Madrid, Spain, pp. 297-304.
15. Tomic S., Wasik A., Lima P. U., Martinoli A., Pecora F., and Saffiotti A., “Towards Institutions for Mixed Human-Robot Societies”, *Proc. of 17th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, July 2018, Stockholm, Sweden, 2018, pp. 2216-2217.

16. Talebpour Z. and Martinoli A., “Multi-Robot Coordination in Dynamic Environments Shared with Humans”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May 2018, Brisbane, Australia, pp. 4593-4600.
17. Quraishi A., Bahr A., Schill F., and Martinoli A., “Autonomous Feature Tracing and Adaptive Sampling in Real-World Underwater Environments”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May 2018, Brisbane, Australia, pp. 5699-5704.
18. Wasik A., Martinoli A., and Lima P., “A Robust Relative Positioning System for Multi-Robot Formations Leveraging an Extended GM-PHD Filter”, *Proc. of the 2017 Int. Symp. on Multi-Robot and Multi-Agent Systems*, December 2017, Los Angeles, USA, pp. 71-77.
19. Rahbar F., Marjovi A., Kibleur P., and Martinoli A., “A 3-D Bio-inspired Odor Source Localization and its Validation in Realistic Environmental Conditions,” *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2017, Vancouver, Canada, pp. 3983-3989.
20. Haghghat B., Thandiackal R., Mordig M., and Martinoli A., “Probabilistic Modeling of Programmable Stochastic Self-Assembly of Robotic Modules”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2017, Vancouver, Canada, pp. 4656-4663.
21. Talebpour Z., Savaré S., and Martinoli A., “Market-based Coordination in Dynamic Environments Based on the Hoplites Framework”, *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2017, Vancouver, Canada, pp. 1105-1112.
22. Canepa A., Talebpour Z., Savaré S., and Martinoli A., “Automatic Calibration of Ultra Wide Band Tracking Systems Using A Mobile Robot: A Person Localization Case-study”, *Proc. of the 2017 Int. Conf. on Indoor Positioning and Indoor Navigation*, September 2017, Sapporo, Japan, DOI: 10.1109/IPIN.2017.8115905 (8 pages).
23. Wasik A., Martinoli A., and Lima P., “An Institutional Robotics Approach to the Design of Socially Aware Multi-Robot Behaviors”, *Proc. of the RO-MAN 2017 Workshop on Towards Intelligent Social Robots: Social Cognitive Systems in Smart Environments*, August 2017, Lisbon, Portugal (6 pages). Proceedings available on <https://www.researchgate.net/publication/322499154>.
24. Llatser I., Jornod G., A. Festag A., Mansolino D., Navarro I., and Martinoli A., “Simulation of Cooperative Automated Driving by Bidirectional Coupling of Vehicle and Network Simulators,” *Proc. of the IEEE Intelligent Vehicles Symposium*, June 2017, Redondo Beach, USA, pp. 1881-1886.
25. Roelofsen S., Gillet D., and Martinoli A., “Collision Avoidance with Limited Field of View Sensing: A Velocity Obstacle Approach,” *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May-June 2017, Singapore, pp. 1922-1927.
26. Palacios Gasós J. M., Talebpour Z., Montijano E., Sagüés C., and Martinoli A., “Optimal Path Planning and Coverage Control for Multi-Robot Persistent Coverage in Environments with Obstacles”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May-June 2017, Singapore, pp. 1321-1327.
27. Emery R., Rahbar F., Marjovi A., and Martinoli A., “Adaptive Lévy Taxis for Odor Source Localization in Realistic Environmental Conditions”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May-June 2017, Singapore, pp. 3552-3559.
28. Marjovi A., Arfire A., and Martinoli A., “Extending Urban Air Pollution Maps beyond the Coverage of a Mobile Sensor Network: Data Sources, Methods, and Performance Evaluation,” *Proc. of the Int. Conf. on Embedded Wireless Systems and Networks*, February 2017, Uppsala, Sweden, pp. 12-23.
29. Roelofsen S., Martinoli A., and Gillet D., “3D Collision Avoidance Algorithm for Unmanned Aerial Vehicles with Limited Field of View Constraints,” *Proc. of the 55th IEEE Int. Conf. on Decision and Control*, December 2016, Las Vegas, USA, pp. 2555-2560.
30. Haghghat B. and Martinoli A., “A Rule Synthesis Algorithm for Programmable Stochastic Self-Assembly of Robotic Modules,” *Proc. of the 13th Int. Symp. on Distributed Autonomous Robotic Systems*, November 2016, London, UK; Springer Proceedings in Advanced Robotics (2018), Vol. 6, pp. 329-343.
31. Roelofsen S., Gillet D., and Martinoli A., “A Comparative Study of Collision Avoidance Algorithms for Unmanned Aerial Vehicles: Performance and Robustness to Noise,” *Proc. of the 13th Int. Symp. on*

- Distributed Autonomous Robotic Systems*, November 2016, London, UK; Springer Proceedings in Advanced Robotics (2018), Vol. 6, pp. 75-88.
32. Schill F., Bahr A., and Martinoli A., "Vertex: A New Distributed Underwater Robotic Platform for Environmental Monitoring," *Proc. of the 13th Int. Symp. on Distributed Autonomous Robotic Systems*, November 2016, London, UK; Springer Proceedings in Advanced Robotics (2018), Vol. 6, pp. 679-693. Best Poster Award and nominated as finalist for the Best Paper Award.
 33. Gan J., Vasic V., and Martinoli A., "Cooperative Multiple Dynamic Object Tracking on Moving Vehicles Based on Sequential Monte Carlo Probability Hypothesis Density Filter," *Proc. of the IEEE Int. Conf. on Intelligent Transportation Systems*, November 2016, Rio de Janeiro, Brazil, pp. 2163-2170.
 34. Navarro I., Zimmermann F., Vasic M., and Martinoli A., "Distributed Graph-Based Control of Convoys of Heterogeneous Vehicles using Curvilinear Road Coordinates," *Proc. of the IEEE Int. Conf. on Intelligent Transportation Systems*, November 2016, Rio de Janeiro, Brazil, pp. 879-886.
 35. Haghighat B. and Martinoli A., "Characterization and Validation of a Novel Robotic System for Fluid-Mediated Programmable Stochastic Self-Assembly," *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2016, Daejeon, Korea, pp. 2278-2783.
 36. Sapkota K. R., Roelofsen S., Rozantsev A., Lepetit V. and Gillet D., Fua P., and Martinoli A. "Vision-Based Unmanned Aerial Vehicle Detection and Tracking for Sense and Avoid Systems", *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2016, Daejeon, Korea, pp. 1556-1561.
 37. Soares J. M., Marjovi A., Giezendanner J., Kodyan A., Aguiar A. P., Pascoal A. M., and Martinoli A., "Towards 3-D Distributed Odor Source Localization: An Extended Graph-Based Formation Control Algorithm for Plume Tracking," *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2016, Daejeon, Korea, pp. 1729-1736.
 38. Vasic M., Mansolino D., and Martinoli A., "A System Implementation and Evaluation of a Cooperative Fusion and Tracking Algorithm based on a Gaussian Mixture PHD Filter," *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2016, Daejeon, Korea, pp. 4172-4179.
 39. Wasik A. B., Pereira J. N., Ventura R., Lima P. U., and A. Martinoli. "Graph-Based Distributed Control for Adaptive Multi-Robot Patrolling through Local Formation Transformation," *Proc. of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2016, Daejeon, Korea, pp. 1721-1728.
 40. Haghighat B., Platerrier B., Waegeli L. and Martinoli A., "Synthesizing Rulesets for Programmable Robotic Self-Assembly: A Case Study using Floating Miniaturized Robots," *Proc. of the 10th Int. Conf. on Swarm Intelligence (ANTS 2016)*, September, 2016, Brussels, Belgium; *Lecture Notes in Computer Science (2016)*, Vol. 9882, pp. 197-209.
 41. Soares J. M., Aguiar A. P., Pascoal A. M., and Martinoli A., "An Algorithm for Formation-Based Chemical Plume Tracing Using Robotic Marine Vehicles," *Proc. of the MTS/IEEE Oceans*, September 2016, Monterey, U.S.A., DOI:10.1109/OCEANS.2016.7761119 (8 pages).
 42. Talebpour Z., Viswanathan D., Ventura R., Englebienne G., and Martinoli A., "Incorporating Perception Uncertainty in Human-Aware Navigation: A Comparative Study," *Proc. of the 25th IEEE Int. Symp. on Robot and Human Interactive Communication*, August 2016, New York, U.S.A., pp. 570-577.
 43. Arfire A., Marjovi A., and Martinoli A., "Enhancing Measurement Quality through Active Sampling in Mobile Air Quality Monitoring Sensor Network," *Proc. of the IEEE Int. Conf. on Advanced Intelligent Mechatronics*, July 2016, Banff, Canada, pp. 1022-1027.
 44. Navarro I., Di Mario E., and Martinoli A., "Noise-Resistant Particle Swarm Optimization for the Learning of Robust Obstacle Avoidance Controllers using a Depth Camera", *Proc. of the 2016 IEEE Congress on Evolutionary Computation*, July 2016, Vancouver, Canada, pp. 685-692.
 45. Vasic M., Lederrey G., Navarro I. and Martinoli A., "An Overtaking Decision Algorithm for Networked Intelligent Vehicles Based on Cooperative Perception," *Proc. of the IEEE Intelligent Vehicles Symposium*, June 2016, Gothenburg, Sweden, pp. 955-960.
 46. Dias D., Ventura R., Lima P. U., and Martinoli A., "On-Board Vision-Based 3D Relative Localization System for Multiple Quadrotors", *Proc. of the 2016 IEEE Int. Conf. on Robotics and Automation*, May 2016, Stockholm, Sweden, pp. 1181-1187.

47. Evans W. C., Dias D., Roelofsen S., and Martinoli A., “Environmental Field Estimation with Hybrid-Mobility Sensor Networks”, *Proc. of the IEEE Int. Conf. on Robotics and Automation*, May 2016, Stockholm, Sweden, pp. 5301-5308.
48. Dias D., Lima P. U., and Martinoli A., “Distributed Formation Control of Quadrotors under Limited Sensor field of View,”, *Proc. of 15th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, May 2016, Singapore, pp. 1087-1095.
49. Arfire A., Marjovi A., and Martinoli A., “Mitigating Slow Dynamics of Low-Cost Chemical Sensors for Mobile Air Quality Monitoring Sensor Networks,” *Proc. of the Int. Conf. on Embedded Wireless Systems and Networks*, February 2016, Graz, Austria, pp. 159-167.
50. Talebpour Z., Navarro I., and Martinoli A., “On-board human-aware navigation for indoor resource-constrained robots: A case-study with the ranger,” *Proc. of the 2015 IEEE/SICE International Symposium on System Integration*, December 2015, Nagoya, Japan, pp. 63-68.
51. Soares J. M., Navarro I., and Martinoli A., “The Khepera IV mobile robot: performance evaluation, sensory data, and software toolbox,” *Proc. of the 2nd Iberian Robotics Conference*, November 2015, Lisbon, Portugal, *Advances in Intelligent Systems and Computing*, Vol. 417, 2015, pp. 767-781.
52. Wasik A., Ventura R., Pereira J. N., Lima P. and Martinoli A. “Lidar-Based Relative Position Estimation and Tracking for Multi-robot Systems,” *Proc. of the 2nd Iberian Robotics Conference*, November 2015, Lisbon, Portugal, *Advances in Intelligent Systems and Computing*, Vol. 417, 2015, pp. 3-16.
53. Navarro I., Di Mario E., and Martinoli A., “Distributed Particle Swarm Optimization - Particle Allocation and Neighborhood Topologies for the Learning of Cooperative Robotic Behaviors”, *Proc. of the 2015 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September-October 2015, Hamburg, Germany, pp. 2958-2965.
54. S. Roelofsen, D. Gillet, and A. Martinoli, “Reciprocal Collision Avoidance for Quadrotors using On-board Visual Detection,” *Proc. of the 2015 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September-October 2015, Hamburg, Germany, pp. 4810-4817.
55. Boberg M., Feltrin G., and Martinoli A., Flutter Suppression of a Bridge Section Model Endowed with Actively Controlled Flap Arrays”, *Proc. of the 2015 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September-October 2015, Hamburg, Germany, pp. 5936-5941.
56. Vasic V. and Martinoli A., “A Collaborative Sensor Fusion Algorithm for Multi-object Tracking using a Gaussian Mixture Probability Hypothesis Density Filter,” *Proc. of the 2015 IEEE Intelligent Transportation Systems Conference*, September 2015, Las Palmas de Gran Canaria, Spain, pp. 491-498.
57. S. Roelofsen, A. Martinoli, and D. Gillet, “Distributed Deconfliction Algorithm for Unmanned Aerial Vehicles with Limited Range and Field of View Sensors,” *Proc. of the American Control Conference*, July 2015, Chicago, U.S.A., pp. 4356-4361.
58. Navarro I., Di Mario E., and Martinoli A., “Distributed vs. Centralized Particle Swarm Optimization for Learning Flocking Behaviors,” *Proc. of the Thirteen European Conf. on Artificial Life*, July 2015, York, U.K., pp. 302-309.
59. Marjovi A., Vasic M., Lemaitre J. and Martinoli A., “Distributed Graph-based Convoy Control for Networked Intelligent Vehicles,” *Proc. of the 2015 IEEE Intelligent Vehicles Symposium*, June-July 2015, Seoul, Korea, pp. 138-143.
60. Marjovi A., Arfire A., and Martinoli A., “High Resolution Air Pollution Maps in Urban Environments using Mobile Sensor Networks”. *Proc. of the 11th International Conference on Distributed Computing in Sensor Systems*, June 2015, Fortaleza, Brazil, pp. 11-20.
61. Jornod G., Di Mario E., Navarro I., and Martinoli A., “SwarmViz: An Open-Source Visualization Tool for Particle Swarm Optimization,” *Proc. of the 2015 IEEE Congress on Evolutionary Computation*, May 2015, Sendai, Japan, pp. 179-186.
62. Di Mario E., Navarro I., and Martinoli A., “Distributed Particle Swarm Optimization using Optimal Computing Budget Allocation for Multi-Robot Learning,” *Proc. of the 2015 IEEE Congress on Evolutionary Computation*, May 2015, Sendai, Japan, pp. 566-572.

63. Soares J. M., Aguiar A. P., Pascoal A. M., and Martinoli A., "A Distributed Formation-Based Odor Source Localization Algorithm -Design, Implementation, and Wind Tunnel Evaluation," *Proc. of the 2015 IEEE Int. Conf. on Robotics and Automation*, May 2015, Seattle, U.S.A., pp. 1830-1836.
64. Di Mario E., Navarro I., and Martinoli A., "A Distributed Noise-Resistant Particle Swarm Optimization Algorithm for High-Dimensional Multi-Robot Learning," *Proc. of the 2015 IEEE Int. Conf. on Robotics and Automation*, May 2015, Seattle, U.S.A., pp. 5970-5976.
65. Boberg M., Feltrin G., and Martinoli A., "A Novel Bridge Section Model Endowed with Actively Controlled Flap Arrays Mitigating Wind Impact," *Proc. of the 2015 IEEE Int. Conf. on Robotics and Automation*, May 2015, Seattle, U.S.A., pp. 1837-1842.
66. Haghghat B., Droz E., and Martinoli A., "Lily: A Miniature Floating Robotic Platform for Programmable Stochastic Self-Assembly," *Proc. of the 2015 IEEE Int. Conf. on Robotics and Automation*, May 2015, Seattle, U.S.A., pp. 1941-1948.
67. Soares J. M., Aguiar A. P., Pascoal A. M., and Martinoli A., "A Graph-Based Formation Algorithm for Odor Plume Tracing". *Proc. of the Twelfth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2014, Daejeon, Korea, Springer Tracts in Advanced Robotics (2016), Vol. 112, pp. 255-269.
68. Breitenmoser A. and Martinoli A., "On Combining Multi-Robot Coverage and Reciprocal Collision Avoidance". *Proc. of the Twelfth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2014, Daejeon, Korea, Springer Tracts in Advanced Robotics (2016), Vol. 112, pp. 49-64.
69. Di Mario E., Navarro I., and Martinoli A., "Analysis of Fitness Noise in Particle Swarm Optimization: From Robotic Learning to Benchmark Functions". *Proc. of the 2014 IEEE Congress on Evolutionary Computation*, July 2014, Beijing, China, pp. 2785-2792.
70. Di Mario, I. Navarro, and A. Martinoli, "Distributed Learning of Cooperative Robotic Behaviors using Particle Swarm Optimization", *Proc. of the Fourteenth Int. Symp. on Experimental Robotics*, June 2014, Marrakech, Morocco, Springer Tracts in Advanced Robotics (2016), Vol. 109, pp. 591-604.
71. Di Mario E., Navarro I., and Martinoli A., "The Role of Environmental and Controller Complexity in the Distributed Optimization of Multi-Robot Obstacle Avoidance". *Proc. of the 2014 IEEE Int. Conf. on Robotics and Automation*, May-June 2014, Hong Kong, China, pp. 571-577.
72. Boberg M., Feltrin G., and Martinoli A., "Model and Control of a Flap System Mitigating Wind Impact on Structures". *Proc. of the 2014 IEEE Int. Conf. on Robotics and Automation*, May-June 2014, Hong Kong, China, pp. 264-269.
73. Mastrangeli M., Schill F., Goldowsky J., Knapp H., Brugger J., Martinoli A., "Automated Real-Time Control of Fluidic Self-Assembly of Microparticles". *Proc. of the 2014 IEEE Int. Conf. on Robotics and Automation*, May-June 2014, Hong Kong, China, pp. 5860-5865.
74. Soares J. M., Aguiar A. P., Pascoal A. M., and Martinoli A., "Design and Implementation of a Range-Based Formation Controller for Marine Robots". *Proc. of the First Iberian Robotics Conference*, November 2013, Madrid, Spain, Advances in Intelligent Systems and Computing (2014), Vol. 252, pp. 55-67.
75. Pereira J.N., Silva P., Lima P. U., and Martinoli A. "An Experimental Study in Wireless Connectivity Maintenance Using up to 40 Robots Coordinated by an Institutional Robotics Approach". *Proc. of the 2013 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, November 2013, Tokyo, Japan, pp. 5073-5079.
76. Di Mario E., Navarro I., and Martinoli A., "The Effect of the Environment in the Synthesis of Robotic Controllers: A Case Study in Multi-Robot Obstacle Avoidance using Distributed Particle Swarm Optimization". *Proc. of the Twelfth European Conf. on Artificial Life*, September 2013, Taormina, Italy, pp. 561-568.
77. Di Mario E., Talebpour Z., and Martinoli A., "A Comparison of PSO and Reinforcement Learning for Multi-Robot Obstacle Avoidance". *Proc. of the 2013 IEEE Congress on Evolutionary Computation*, June 2013, Cancún, México, pp.149-156.
78. Evans W. C., Bahr A., and Martinoli A., "Distributed Spatiotemporal Suppression for Environmental Data Collection in Real-World Sensor Networks". *Proc. of the 2013 IEEE Int. Conf. on Distributed Computing in Sensor Systems*, May 2013, Boston, U.S.A., pp. 70-79.

79. Soares J. M., Aguiar A. P., Pascoal A. M., and Martinoli A., “Joint ASV/AUV Range-Based Formation Control: Theory and Experimental Results”. *Proc. of the 2013 IEEE Int. Conf. on Robotics and Automation*, May 2013, Karlsruhe, Germany, pp. 5579-5585.
80. Di Mario E. and Martinoli A., “Distributed Particle Swarm Optimization for Limited Time Adaptation in Autonomous Robots”. *Proc. of the Eleventh Int. Symp. on Distributed Autonomous Robotic Systems*, November 2012, Baltimore, U.S.A.; Springer Tracts in Advanced Robotics (2014), Vol. 104, pp. 383-396.
81. Bahr A., Leonard J. J., and Martinoli A., Dynamic Positioning of Beacon Vehicles for Cooperative Underwater Navigation. *Proc. of the 2012 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2012, Vilamoura, Algarve, Portugal, pp. 3760-3767.
82. Goyal S. and Martinoli A., “Real-time Optimization of Trajectories that Guarantee the Rendezvous of Mobile Robots”. *Proc. of the 2012 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2012, Vilamoura, Algarve, Portugal, pp. 3518-3525.
83. Evans W. C., Bahr A., and Martinoli A., “A Flexible In Situ Power Monitoring Unit for Environmental Sensor Networks”. *Proc. of the IROS 2012 Workshop on Robotics for Environmental Monitoring*, October 2012, Vilamoura, Algarve, Portugal.
84. Bahr A., Feldman A., Colli-Vignarelli J., Robert S., Dehollain C., and Martinoli A., “Modeling and Benchmarking Ultra-Wideband Localization for Mobile Robots”. *Proc. of the 2012 IEEE Int. Conf. on Ultra-Wideband*, September 2012, Syracuse, NY, U.S.A., pp. 443-447.
85. Prorok A. and Martinoli A., “Accurate Localization with Ultra-Wideband: Tessellated Spatial Models and Collaboration”. *Proc. of the Thirteenth Int. Symp. on Experimental Robotics*, June 2012, Québec City, Canada, Springer Tracts in Advanced Robotics (2013), Vol. 88, pp. 321-335.
86. Goyal S. and Martinoli A., “Real-time Optimized Rendezvous on Nonholonomic Resource-Constrained Robots”. *Proc. of the Thirteenth Int. Symp. on Experimental Robotics*, June 2012, Québec City, Canada, Springer Tracts in Advanced Robotics (2013), Vol. 88, pp. 353-368.
87. Das J., Evans W. C., Minnig M., Bahr A., Sukhatme G. S., and Martinoli A. “Environmental Sensing using Land-based Spectrally-selective Cameras and a Quadcopter”. *Proc. of the Thirteenth Int. Symp. Experimental Robotics*, June 2012, Québec City, Canada, Springer Tracts in Advanced Robotics (2013), Vol. 88, pp. 259-272.
88. Cabrera A., Goyal S., and Martinoli A., “A New Collision Warning System for Lead Vehicles in Rear-end Collisions”. *Proc. of the 2012 IEEE Int. Symp. on Intelligent Vehicles*, June 2012, Alcalá de Henares, Spain, pp. 674-679.
89. Mermoud G., Mastrangeli M., Upadhyay U., and Martinoli A., “Real-Time Automated Modeling and Control of Self-Assembling Systems”. *Proc. of the 2012 IEEE Int. Conf. on Robotics and Automation*, May 2012, Saint Paul, MN, USA, pp. 4266-4273.
90. Prorok A., Gonon L., and Martinoli A., “Online Model Estimation of Ultra-Wideband TDOA Measurements for Mobile Robot Localization”. *Proc. of the 2012 IEEE Int. Conf. on Robotics and Automation*, May 2012, Saint Paul, MN, USA, pp. 807-814.
91. Prorok A., Bahr A., and Martinoli A., “Low-Cost Collaborative Localization for Large-Scale Multi-Robot Systems”. *Proc. of the 2012 IEEE Int. Conf. on Robotics and Automation*, May 2012, Saint Paul, MN, USA, pp. 4236-4241.
92. Bahr A., Evans W. C., Higgins C., Huwald H., Parlange M., and Martinoli A., “Measuring Sensible Heat Flux with High Spatial Density”. *Proc. of the 2012 IEEE Sensors Applications Symposium*, February 2012, Brescia, Italy, DOI: 10.1109/SAS.2012.6166293 (6 pages).
93. Prorok A., Evans W. C., and Martinoli A., “An Adaptive Field Estimation Algorithm for Sensor Networks in Dynamic Environments”. *Proc. of the IROS 2011 Workshop on Robotics for Environmental Monitoring*, September 2011, San Francisco, USA.
94. Goyal S., Prorok A., and Martinoli A., “Two-Phase Online Calibration for Infrared-based Inter-Robot Positioning Modules”. *Proc. of the 2011 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2011, San Francisco, USA, pp. 3313-3319.

95. Gowal S. and Martinoli A., “Bayesian Rendezvous for Distributed Robotic Systems”. *Proc. of the 2011 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2011, San Francisco, USA, pp. 2765-2771.
96. Di Mario E., Mermoud G., Mastrangeli M., and Martinoli A. “A Trajectory-based Calibration Method for Stochastic Motion Models”. *Proc. of the 2011 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2011, San Francisco, U.S.A., pp. 4341-4347.
97. Prorok A. and Martinoli A., “A Reciprocal Sampling Algorithm for Lightweight Distributed Multi-Robot Localization”. *Proc. of the 2011 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2011, San Francisco, U.S.A., pp. 3241-3247.
98. Prorok A., Tomé P., and Martinoli A. “Accommodation of NLOS for Ultra-Wideband TDOA Localization in Single- and Multi-Robot Systems”. *Proc. of the 2011 Int. Conf. on Indoor Positioning and Indoor Navigation*, September 2011, Guimarães, Portugal, DOI: 10.1109/IPIN.2011.6071927 (10 pages).
99. Feldman A., Bahr A., Colli-Vignarelli J., Robert S., Dehollain C., and Martinoli A., “Toward the Deployment of an Ultra-Wideband Localization Test Bed”. *Proc. of the 74th IEEE Conf. on Vehicular Technology*, September 2011, San Francisco, U.S.A., DOI: 10.1109/VETECEF.2011.6093170 (5 pages).
100. Pereira J.N., Silva P., Lima P. U., and Martinoli A., “Formalizing Institutions as Executable Petri Nets for Distributed Robotic Systems”. *Proc. of the Eleventh European Conf. on Artificial Life*, August 2011, Paris, France, pp. 646-653.
101. Vaussard F., Bonani M., Rétornaz P., Martinoli A., and Mondada F., “Towards Autonomous Energy-Wise ROjects”. *Proc. of the Twelfth Annual Conf. Towards Autonomous Robotic Systems*, August-September 2011, Sheffield, UK. Lecture Notes in Computer Science (2011), Vol. 6856, pp. 311-322.
102. Mermoud G., Upadhyay U., Evans W. C., and Martinoli A., “Top-Down vs Bottom-Up Model-Based Methodologies for Distributed Control: A Comparative Experimental Study”. *Proc. of the Twelfth Int. Symp. Experimental Robotics*, December 2010, New Delhi, India, Springer Tracts in Advanced Robotics (2014), Vol. 79, pp. 615-629.
103. Evans W. C., Bahr A., and Martinoli A., “Evaluating Efficient Data Collection Algorithms for Environmental Sensor Networks”. *Proc. of the Tenth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2010, Lausanne, Switzerland; Springer Tracts in Advanced Robotics (2013), Vol. 83, pp. 77-89.
104. Lochmatter T., Aydın Göl E., Navarro I., and Martinoli A., “A Plume Tracking Algorithm based on Crosswind Formations”. *Proc. of the Tenth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2010, Lausanne, Switzerland; Springer Tracts in Advanced Robotics (2013), Vol. 83, pp. 91-102. Nominated for the Best Paper Award.
105. Aberer K., Sathe S., Chakraborty D., Martinoli A., Barrenetxea G., Faltings B., and Thiele L., “OpenSense: Open Community Driven Sensing of Environment”. *Proc. of the 2010 ACM SIGSPATIAL Int. Workshop on GeoStreaming*, November 2010, San Jose, CA, USA, DOI: 10.1145/1878500.1878509 (4 pages).
106. Gowal S., Zhang Y., and Martinoli A., “A Realistic Simulator for the Design and Evaluation of Intelligent Vehicles”. *Proc. of the 2010 IEEE Int. Conf. on Intelligent Transportation Systems*, September 2010, Madeira Island, Portugal, pp. 1039-1044.
107. Gowal S., Falconi R., and Martinoli A., “Local Graph-based Distributed Control for Safe Highway Platooning”. *Proc. of the 2010 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October 2010, Taipei, Taiwan, pp. 6070-6076.
108. Prorok A., Arfire A., Bahr A., Farserotu J. R. and Martinoli A., “Indoor Navigation Research with the Khepera III Mobile Robot: An Experimental Baseline with a Case-Study on Ultra-Wideband Positioning”. *Proc. of the 2010 Int. Conf. on Indoor Positioning and Indoor Navigation*, September 2010, Zurich, Switzerland, DOI: 10.1109/IPIN.2010.5647880 (10 pages).
109. Mermoud G., Matthey L., Evans W. C., and Martinoli A., “Aggregation-mediated Collective Perception and Action in a Group of Miniature Robots”. *Proc. of the Ninth ACM Int. Joint Conf. on Autonomous*

- Agents and Multi-Agent Systems*, May 2010, Toronto, Canada, pp. 599-606. Nominated finalist for the Best Paper Award.
110. Evans W. C., Mermoud G., and Martinoli A., "Comparing and Modeling Distributed Control Strategies for Miniature Self-Assembling Robots". *Proc. of the 2010 IEEE Int. Conf. on Robotics and Automation*, May 2010, Anchorage, AK, U.S.A., pp. 1438-1445.
111. Falconi R., Goyal S., and Martinoli A., "Graph-Based Distributed Control of Non-Holonomic Vehicles Endowed with Local Positioning Information Engaged in Escorting Missions". *Proc. of the 2010 IEEE Int. Conf. on Robotics and Automation*, May 2010, Anchorage, AK, U.S.A., pp. 3207-3214.
112. Prorok A., Cianci C. M., and Martinoli A., "Towards Optimally Efficient Field Estimation with Threshold-Based Pruning in Real Robotic Sensor Networks". *Proc. of the 2010 IEEE Int. Conf. on Robotics and Automation*, May 2010, Anchorage, AK, U.S.A., pp. 5453-5459.
113. Mondada F., Bonani M., Raemy X., Pugh J., Cianci C., Klapotcz A., Magnenat S., Zufferey J.-C., Floreano D., Martinoli A., "The e-puck, a Robot Designed for Education in Engineering". *Proc. of the 9th Conference on Autonomous Robot Systems and Competitions*, May 2009, Castelo Branco, Portugal, 1(1): pp. 59-65.
114. Hsieh M. A., Halász A., Cubuk E. D., Schoenholz S., and Martinoli A., "Specialization as an Optimal Strategy Under Varying External Conditions". *Proc. of the 2009 IEEE Int. Conf. on Robotics and Automation*, May 2009, Kobe, Japan, pp. 1941-1946.
115. Lochmutter T. and Martinoli A., "Theoretical Analysis of Three Bio-Inspired Plume Tracking Algorithms". *Proc. of the 2009 IEEE Int. Conf. on Robotics and Automation*, May 2009, Kobe, Japan, pp. 2661-2668.
116. Mermoud G., Brugger J., and Martinoli A., "Towards Multi-Level Modeling of Self-Assembling Intelligent Micro-Systems". *Proc. of the Eighth ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems*, May 2009, Budapest, Hungary, Vol. 1, pp. 89-96.
117. Falconi R., Goyal S., Pugh J., and Martinoli A., "Graph-Based Distributed Control for Non-Holonomic Vehicles Engaged in a Reconfiguration Task using Local Positioning Information". *Proc. of the Second Int. Conf. on Robot Communication and Coordination*, March-April 2009, Odense, Denmark, DOI: 10.4108/ICST.ROBOCOMM2009.5865 (6 pages).
118. Lochmutter T. and Martinoli A., "Simulation Experiments with Bio-Inspired Algorithms for Odor Source Localization in Laminar Wind Flow". *Proc. of the Seventh Int. Conf. on Machine-Learning and Applications*, special session on "From Biological Intelligence to Machine Intelligence: Abstraction, Evaluation, and Validation of Algorithm for Olfactory-Based Navigation", December 2008, San Diego, CA, U.S.A., pp. 437-443.
119. Lochmutter T. and Martinoli A., "Understanding the Potential Impact of Multiple Robots in Odor Source Localization". *Proc. of the Ninth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2008, Tsukuba, Ibaraki, Japan; *Distributed Autonomous Robotic Systems 8 (2009)*, pp. 239-250.
120. Navarro I., Pugh J., Martinoli A., and Matía F., "A Distributed Scalable Approach to Formation Control in Multi-Robot Systems". *Proc. of the Ninth Int. Symp. on Distributed Autonomous Robotic Systems*, November 2008, Tsukuba, Ibaraki, Japan; *Distributed Autonomous Robotic Systems 8 (2009)*, pp. 203-214.
121. Lochmutter T., Roduit P., Cianci C., Correll N., Jacot J. and Martinoli A., "SwisTrack - A Flexible Open Source Tracking Software for Multi-Agent Systems", *Proc. of the 2008 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2008, Nice, France, pp.4004-4010.
122. Cianci C., Nembrini J., Prorok A., and Martinoli A., "Assembly of Configurations in a Networked Robotic System: A Case Study on a Reconfigurable Interactive Table Lamp". *Proc. of the 2008 IEEE Symp. on Swarm Intelligence*, September 2008, St Louis, MO, USA, DOI: 10.1109/SIS.2008.4668318. Invited paper.
123. Lochmutter T. and Martinoli A., "Tracking Odor Plumes in a Laminar Wind Field with Bio-inspired Algorithms". *Proc. of the Eleventh Int. Symp. on Experimental Robotics*, July 2008, Athens, Greece, Springer Tracts in Advanced Robotics (2009), Vol. 54, pp. 473-482, 2008.
124. Pugh J. and Martinoli A., "Distributed Adaptation in Multi-Robot Search using Particle Swarm Optimization". *Proc. of the Tenth Int. Conference on the Simulation of Adaptive Behavior*, July 2008, Osaka, Japan. *Lecture Notes in Artificial Intelligence (2008)*, Vol. 5040, pp. 393-402.

125. Lochmatter T., Raemy X., Matthey L., Indra S. and Martinoli A., "A Comparison of Casting and Spiraling Algorithms for Odor Source Localization in Laminar Flow". *Proc. of the 2008 IEEE Int. Conf. on Robotics and Automation*, May 2008, Pasadena, U.S.A., pp. 1138-1143.
126. Cianci C., Pugh J, and Martinoli A. "Exploration of an Incremental Suite of Microscopic Models for Acoustic Event Monitoring Using a Robotic Sensor Network". *Proc. of the 2008 IEEE Int. Conf. on Robotics and Automation*, May 2008, Pasadena, U.S.A., pp. 3290-3295.
127. Fakhfour V., Cantale N., Mermoud G., Kim J.Y., Boiko D., Charbon E., Martinoli A., and Brugger J. "Inkjet Printing of SU-8 for Polymer-Based MEMS; A case Study for Microlenses". *Proc. of the 2008 IEEE Int. Conf on Micro Electro Mechanical Systems*, January 2008, Tucson, AZ, USA, pp. 407-410.
128. Roduit P., Martinoli A., and Jacot J., "A Quantitative Method for Comparing Trajectories of Mobile Robots Using Point Distribution Models". *Proc. of the 2007 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, October-November 2007, San Diego, USA, pp. 2441-2448.
129. Pugh J. and Martinoli A., "Parallel Learning in Heterogeneous Multi-Robot Swarms". *Proc. of the 2007 IEEE Congress on Evolutionary Computation*, September 2007, Singapore, pp. 3839-3846.
130. Correll N. and Martinoli A., "Modeling Self-Organized Aggregation of a Swarm of Miniature Robots. *Proc. of the IEEE ICRA 2007 Workshop on Collective Behaviors inspired by Biological and Biochemical Systems*, April 2007, Rome, Italy (6 pages).
131. Pugh J. and Martinoli A., "The Cost of Reality: Effects of Real-World Factors on Multi-Robot Search". *Proc. of the 2007 IEEE Int. Conf. on Robotics and Automation*, April 2007, Rome, Italy, pp. 397-404.
132. Correll N. and Martinoli A., "Robust Distributed Coverage using a Swarm of Miniature Robots". *Proc. of the 2007 IEEE Int. Conf. on Robotics and Automation*, April 2007, Rome, Italy, pp. 379-384.
133. Pugh J. and Martinoli A., "Inspiring and Modeling Multi-Robot Search with Particle Swarm Optimization". *Proc. of the 2007 IEEE Symp. on Swarm Intelligence*, April 2007, Honolulu, HI, USA, pp. 332-339.
134. Mermoud G., Fakhfour V., Martinoli A., and Brugger J., "Towards Smart Substrates for Controlling Micrometric Droplet Motion," *Proc. of the Fourth Conference on Foundations of Nanoscience (FNANO07): Self-Assembled Architectures and Devices*, Snowbird, UT, April 2007, pp. 246-250.
135. Correll N., Cianci C., Raemy X., and Martinoli A., "Self-Organized Embedded Sensor/Actuator Networks for "Smart" Turbines". *Proc. of the IEEE/RSJ IROS 2006 Workshop on Networked Robotic Systems*, Beijing, China, October, 2006 (5 pages).
136. Cianci C., Raemy X., Pugh J., and Martinoli A., "Communication in a Swarm of Miniature Robots: The e-Puck as an Educational Tool for Swarm Robotics". *Proc. of the SAB 2006 Workshop on Swarm Robotics*, September-October 2006, Rome, Italy. *Lecture Notes in Computer Science (2007)*, Vol. 4433, pp. 103-115.
137. Correll N., Sempo G., Lopez de Meneses Y., Halloy J., Deneubourg J.-L., and Martinoli A., "SwisTrack: A Tracking Tool for Multi-Unit Robotic and Biological Systems". *Proc. of the 2006 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, Beijing, China, October, 2006, pp. 2185-2191.
138. Roduit P., Martinoli A., and Jacot J., "Behavioral Analysis of Mobile Robot Trajectories using a Point Distribution Model". In Nolfi S., Baldassare G., Calabretta R., Hallam J., Marocco D., Miglino O., Meyer J.-A., and Parisi, D., editors, *Proc. of the Ninth Int. Conference on the Simulation of Adaptive Behavior*, September 2006, Roma, Italy, *Lecture Notes in Artificial Intelligence (2006)*, Vol. 4095, pp. 819-830.
139. Correll N. and Martinoli A., "Towards Optimal Control of Self-Organized Robotic Inspection Systems", *Proc. of the Eight IFAC Symposium on Robot Control*, September 2006, Bologna, Italy, paper no. R-035 (6 pages).
140. Correll N. and Martinoli A., "System Identification of Self-Organizing Robotic Swarms". *Proc. of the Eight Int. Symp. on Distributed Autonomous Robotic Systems*, July 2006, Minneapolis/St. Paul, MN, USA, *Distributed Autonomous Robotic Systems 7 (2006)*, pp. 31-40. Best Paper Award.
141. Kalra N. and Martinoli A., "A Comparative Study between Threshold-Based and Market-Based Task Allocation". *Proc. of the Eight Int. Symp. on Distributed Autonomous Robotic Systems*, July 2006, Minneapolis/St. Paul, MN, USA, *Distributed Autonomous Robotic Systems 7 (2006)*, pp. 91-102. Nominated finalist for the Best Paper Award.

142. Pugh J. and Martinoli A., "Small-Scale Robot Formation Movement Using a Simple On-Board Relative Positioning System". In Khatib O., Kumar V., and Rus D., editors, *Proc. of the Tenth Int. Symp. Experimental Robotics*, July 2006, Rio de Janeiro, Brazil, Springer Tracts in Advanced Robotics (2008), Vol. 39, pp. 297-306.
143. Correll N., Rutishauser S., and Martinoli A., "Comparing Coordination Schemes for Miniature Robotic Swarms: A Case Study in Boundary Coverage of Regular Structures". In Khatib O., Kumar V., and Rus D., editors, *Proc. of the Tenth Int. Symp. Experimental Robotics*, July 2006, Rio de Janeiro, Brazil, Springer Tracts in Advanced Robotics (2008), Vol. 39, pp. 471-480.
144. Pugh J. and Martinoli A., "Discrete Multi-Valued Particle Swarm Optimization". *Proc. of the 2006 IEEE Symp. on Swarm Intelligence*, May 2006, Indianapolis, IN, USA, pp. 103-110.
145. Pugh J. and Martinoli A., "Relative Localization and Communication Module for Small-Scale Multi-Robot Systems". *Proc. of the 2006 IEEE Int. Conf. on Robotics and Automation*, May 2006, Orlando, FL, USA, pp. 188-193.
146. Pugh J. and Martinoli A., "Multi-Robot Learning with Particle Swarm Optimization". *Proc. of the Fifth ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems*, May 2006, Hakodate, Japan, pp. 441-448.
147. Cianci C., Trifa V., and Martinoli A., "Threshold-based Algorithms for Power-Aware Load Balancing in Sensor Networks". *Proc. of the 2005 IEEE Symp. on Swarm Intelligence*, June 2005, Pasadena, CA, USA, pp. 349-356.
148. Nembrini J., Reeves N., Poncet E., Martinoli A., and Winfield A., "Mascarillons: Flying Swarm Intelligence for Architectural Research". *Proc. of the 2005 IEEE Symp. on Swarm Intelligence*, June 2005, Pasadena, CA, USA, pp. 225-232.
149. Pugh J., Zhang Y., and Martinoli A., "Particle Swarm Optimization for Unsupervised Robotic Learning". *Proc. of the 2005 IEEE Symp. on Swarm Intelligence*, June 2005, Pasadena, CA, USA, pp. 92-99.
150. Correll N. and Martinoli A., "Modeling and Analysis of Beaconless and Beacon-Based Policies for a Swarm-Intelligent Inspection System". *Proc. of the 2005 IEEE Int. Conf. on Robotics and Automation*, March 2005, Barcelona, Spain, pp. 2488-2493.
151. Zhang Y., Martinoli A., and Antonsson E. K., "Evolving Neural Controllers for Collective Robotic Inspection". In Abraham A., de Baets B., Köppen M., Nickolay B., editors, *Proc. of the Ninth On-Line World Conf. on Soft Computing in Industrial Applications*, September-October 2004. Applied Soft Computing Technologies: The Challenge of Complexity, Series Advances in Soft Computing (2006), pp. 721-733.
152. Lerman K., Martinoli A., and Galstyan A., "A Review of Probabilistic Macroscopic Models for Swarm Robotic Systems". In Sahin E. and Spears W., editors, *Proc. of the SAB 2004 Workshop on Swarm Robotics*, July 2004, Santa Monica, CA, USA. Lecture Notes in Computer Science (2005), Vol. 3342, pp. 143-152. Invited paper.
153. Correll N. and Martinoli A., "Modeling and Optimization of a Swarm-Intelligent Inspection System". In Alami R., Asama H., and Chatila R., editors, *Proc. of the Seventh Int. Symp. on Distributed Autonomous Robotic Systems*, June 2004, Toulouse, France. Distributed Autonomous Robotic Systems 6 (2007), pp. 369-378.
154. Correll N. and Martinoli A., "Collective Inspection of Regular Structures using a Swarm of Miniature Robots". In Ang Jr., M.H. and Khatib, O., editors, *Proc. of the Ninth Int. Symp. Experimental Robotics*, June 2004, Singapore. Springer Tracts in Advanced Robotics (2006), Vol. 21, pp. 375-385.
155. Li L., Martinoli A., and Abu-Mostafa Y., "Diversity and Specialization in Collaborative Swarm Systems". In Balch T. and Anderson C., editors, *Proc. of the Second Int. Workshop on Mathematics and Algorithms of Social Insects*, December 2003, Atlanta, GA, USA, pp. 91-98.
156. Antonsson E. K., Zhang Y., and Martinoli A., "Evolving Engineering Design Trade-Offs". *Proc. of the ASME Fifteenth Int. Conf. on Design Theory and Methodology*, September 2003, Chicago, IL, USA, paper no. DETC2003/DTM-48676, pp. 819-827.

157. Zhang Y., Martinoli A., Antonsson E. K., and Olney R., "Evolution of Sensory Configurations for Intelligent Vehicles". *Proc. of the IEEE Intelligent Vehicles Symp.*, June 2003, Columbus, OH, USA, pp. 351-356.
158. Zhang Y., Martinoli A., and Antonsson E. K., "Evolutionary Design of a Collective Sensory System". In H. Lipson, E. K. Antonsson, and J. R. Koza, editors, *Proc. of the 2003 AAAI Spring Symp. on Computational Synthesis*, March 2003, Stanford, CA, USA, pp. 283-290.
159. Martinoli A. and Easton K., "Optimization of Swarm Robotic Systems via Macroscopic Models". In A. C. Schultz, L. E. Parker, and F. E. Schneider, editors, *Proc. of the Second Int. Workshop on Multi-Robots Systems*, March 2003, Washington, DC, USA, pp. 181-192. Invited paper.
160. Agassounon W. and Martinoli A., "A Macroscopic Model of an Aggregation Experiment using Embodied Agents in Groups of Time-Varying Sizes". *Proc. of the 2002 IEEE Conf. on System, man and Cybernetics*, October 2002, Hammamet, Tunisia, Vol. 2, pp. 250-255.
161. Easton K. and Martinoli A., "Efficiency and Optimization of Explicit and Implicit Communication Schemes in Collaborative Robotics Experiments". *Proc. of the 2002 IEEE Int. Conf. on Intelligent Robots and Systems*, September-October 2002, Lausanne, Switzerland, Vol. 3, pp. 2795-2800.
162. Li L., Martinoli A., and Abu-Mostafa Y., "Emergent Specialization in Swarm Systems". In H. Yin, N. Allinson, R. Freeman, J. Keane, and S. Hubbard, editors, *Proc. of the Third Int. Conf. on Intelligent Data Engineering and Automated Learning*, August 2002, Manchester, UK. Lecture Notes in Computer Science (2002), Vol. 2412, pp. 261-266.
163. Agassounon W. and Martinoli A., "Efficiency and Robustness of Threshold-Based Distributed Allocation Algorithms in Multi-Agent Systems". *Proc. of the First ACM Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems*, July 2002, Bologna, Italy, pp. 1090-1097.
164. Martinoli A. and Easton K., "Modeling Swarm Robotic Systems". In B. Siciliano and P. Dario, editors, *Proc. of the Eight Int. Symp. on Experimental Robotics*, July 2002, Sant'Angelo d'Ischia, Italy. Springer Tracts in Advanced Robotics (2003), Vol. 5, pp. 297-306. Invited paper.
165. Hayes A. T., Martinoli A., and Goodman R. M., "Swarm Robotic Odor Localization". *Proc. of the 2001 IEEE Conf. on Intelligent Robots and Systems*, October 2001, Wailea, Hawaii, USA, Vol. 2, pp. 1073-1078.
166. Agassounon W., Martinoli A., and Goodman R. M., "A Scalable, Distributed Algorithm for Allocating Workers in Embedded Systems". *Proc. of the 2001 IEEE Conf. on System, man and Cybernetics*, October 2001, Tucson, AR, USA, Vol. 5, pp. 3367-3373.
167. Hayes A. T., Martinoli A., and Goodman R. M., "Comparing Distributed Exploration Strategies with Simulated and Real Autonomous Robots". In Parker L. E., Bekey G., and Bahren J., editors, *Proc. of the Fifth Int. Symp. on Distributed Autonomous Robotic Systems*, October 2000, Knoxville, TN, USA. Distributed Autonomous Robotic Systems 4 (2000), pp. 261-270.
168. Martinoli A., Ijspeert A. J., and Gambardella L. M., "A Probabilistic Model for Understanding and Comparing Collective Aggregation Mechanisms". In Floreano D., Mondada F., and Nicoud J.-D., editors, *Proc. of the Fifth Europ. Conf. on Artificial Life*, September 1999, Lausanne, Switzerland. Lectures Notes in Artificial Intelligence (1999), Vol. 1674, pp. 575-584.
169. Billard A., Ijspeert A. J., and Martinoli A., "Adaptive Exploration of a Dynamic Environment by a Group of Communicating Robots". In Floreano D., Mondada F., and Nicoud J.-D., editors, *Proc. of the Fifth Europ. Conf. on Artificial Life*, September 1999, Lausanne, Switzerland. Lectures Notes in Artificial Intelligence (1999), Vol. 1674, pp. 596-605.
170. Martinoli A. and Mondada F., "Probabilistic Modeling of a Bio-Inspired Collective Experiments with Real Robots". In Lüth T., Dillman R., Dario P., and Wörn H., editors, *Proc. of the Fourth Int. Symp. on Distributed Autonomous Robotic Systems*, May 1998, Karlsruhe, Germany. Distributed Autonomous Robotic Systems 3 (1998), pp. 289-308.
171. Martinoli A., Franzi E., and Matthey O., "Towards a Reliable Set-Up for Bio-Inspired Collective Experiments with Real Robots". In Casals A. and De Almeida A. T., editors, *Proc. of the Fifth Int. Symp. on Experimental Robotics*, June 1997, Barcelona, Spain. Lecture Notes in Control and Information Sciences (1998), Vol. 232, pp. 597-608.

172. Armada M. A., Martinoli A., and Selaya J., "Robip: A Software Package for the Experimental Evaluation of the Required Degrees of Freedom for a Biped Robot". In Kopacek P., editor, *Proc. of IFAC-Workshop on Human-Oriented Design of Advanced Robotics Systems*, September 1995, Vienna, Austria, Vol. 2, pp. 203-208.
173. Martinoli A. and Mondada F., "Collective and Cooperative Group Behaviors: Biologically Inspired Experiments in Robotics". In Khatib O. and Salisbury J. K., editors, *Proc. of the Fourth Int. Symp. on Experimental Robotics*, June 1995, Stanford, CA, USA. Lecture Notes in Control and Information Sciences (1997), Vol. 223, pp. 3-10.

Books – Invited Chapters (7)

1. Obst M., Marjovi A., Vasic M., Navarro I. Martinoli A., Amditis A., Pantazopoulos P., Llatser I., de La Fortelle A., and Qian X., "Challenges for Automated Cooperative Driving: The AutoNet2030 Approach". In D. Watzenig, M. Horn, editors, *Automated Driving*, Springer International Publishing, Switzerland, 2017, Chapter 26, pp. 561-570.
2. Pereira J.N., Silva P., Lima P. U., and Martinoli A., "Social-Aware Coordination of Multi-Robot Systems Based on Institutions". In P. Spagnolo, P. L. Mazzeo, and C. Distanto, editors, *Human Behavior Understanding in Networked Sensing*, Springer International Publishing, Switzerland, 2014, Chapter 19, pp. 407-430.
3. Prorok A., Bahr, A., and Martinoli A., "Low-Cost Multi-robot Localization". In D. Milutinović & J. Rosen, editors, *Redundancy in Robot Manipulators and Multi-Robot Systems*, Springer Verlag, Berlin and Heidelberg, Germany, Lecture Notes in Electrical Engineering, 2013, Vol. 57, pp. 15-33.
4. Mermoud G., Prorok A., Matthey L., Cianci C. M., Correll N., and Martinoli A., "Self-Organized Robotic Systems: Large-Scale Experiments in Aggregation and Self-Assembly using Miniature Robots". In Kernbach S., editor, *Handbook of Collective Robotics*, Pan Stanford Publishing, Singapore, 2013, Chapter 8, pp. 229-259.
5. Mondada F., Halloy J., Martinoli A., Correll N., Gribovskiy A., Sempo G., Siegwart R., and Deneubourg J.-L., "A General Methodology for the Control of Mixed Natural-Artificial Societies". In Kernbach S., editor, *Handbook of Collective Robotics*, Pan Stanford Publishing, Singapore, 2013, Chapter 15, pp. 547-586.
6. Pugh J. and Martinoli A., "An Exploration of Online Parallel Learning in Heterogeneous Multi-Robot Swarms". In Liu D., and Wang L.F., and Tan K.C., editors, *Design and Control of Intelligent Robotic Systems*, Springer Verlag, Berlin, Germany, Studies on Computational Intelligence, 2009, Vol. 177, Chapter 7, pp. 133-151.
7. Floreano D., Godjevac J., Martinoli A., Mondada F., and Nicoud, J.-D., "Design, Control, and Applications of Autonomous Mobile Robots". In Tzafestas S. G., editor, *Advances in Intelligent Autonomous Agents*, Kluwer Academic Publishers, Boston, US, 1999, Part 2, Chapter 8, pp. 159-184.

Books – Invited Reviews (1)

1. Martinoli A., "Collective Complexity out of Individual Simplicity". Invited book review on "Swarm Intelligence: From Natural to Artificial Systems", by E. Bonabeau, M. Dorigo, and G. Theraulaz. *Artificial Life*, 7(3): 315-319, 2001.

Books/Collections – Edited (4)

1. *Proceedings of the Thirteenth Int. Symp. on Distributed Autonomous Robotic Systems (DARS 2016)*, November 2016, London, UK; Gross R., Kolling A., Berman S., Frazzoli E., Martinoli A., Matsuno F., and Gauci M., Springer Proceedings in Advanced Robotics (2018), Vol. 6, Springer Verlag.
2. *Proceedings of the Tenth Int. Symp. on Distributed Autonomous Robotic Systems (DARS 2010)*, November 2010, Lausanne, Switzerland; Martinoli A., Mondada F., Correll N., Mermoud G., Egerstedt M., Hsieh M. A., Parker L. E., and Stoy K., Springer Tracts in Advanced Robotics (2013), Vol. 83, Springer Verlag.
3. *Proceedings of the Fifth International Workshop on Ant Colony optimization and Swarm Intelligence (ANTS 2006)*, Brussels, Belgium, September 2006; Dorigo M., Gambardella L.M., Birattari M., Martinoli A., Poli R., and Stuezle T., editors, Lecture Notes in Computer Sciences, Vol. 4150, Springer Verlag.

4. *Proceedings of the Second IEEE Swarm Intelligence Symposium (SIS 2005)*, Pasadena, USA, June 2005; Arabshahi P., Martinoli A., Lerman K., Galstyan A., and Gambardella L.M., editors, Omnipress. Proceedings available on the digital library IEEE Xplore.

Invited, Editor-Reviewed Journal Papers – Broad Public Audience (5)

1. Lochmatter T., Raemy X., and Martinoli A., “Geruchslokalisation mit mobilen Robotern”, *ITBusiness Journal*, 1: 40-41, 2007 (in German).
2. Lochmatter T., Raemy X., and Martinoli A., “Odor Source Localization with Mobile Robots”. *Newsletter of the Swiss Society for Automatic Control*, 46: 12-14, 2007.
3. Correll N. and Martinoli A., “A Challenging Application in Swarm Robotics: The Autonomous Inspection of Complex Engineered Structures”. *Newsletter of the Swiss Society for Automatic Control*, 46: 15-19, 2007.
4. Nembrini J., Hongler C., Martinoli A., Keller P., and Babski C., “Une ambiance lumineuse en fonction des besoins”. *EPFL Alumni Journal*, special issue on Engineering and Design, 5: 5 (in French), 2006.
5. Martinoli A., Theraulaz G., and Deneubourg J.-L., “Quand les robots imitent la nature”. *La Recherche*, 358: 56-62, 2002 (in French).

Editor-Reviewed Conference/Symposium/Workshop Papers (8)

1. Arfire A., Marjovi A., and Martinoli A., “Model-based Rendezvous Calibration of Mobile Sensor Networks for Monitoring Air Quality,” *Proc. of 2015 IEEE Sensors*, November 2015, Busan, South Korea, DOI: 10.1109/ICSENS.2015.7370258.
2. Boberg M., Feltrin G., and Martinoli A., “Experimental Validation of the Wing-Aileron-Tab Combination Applied to an Actively Controlled Bridge Section Model”, *Proc. of the 14th International Conference on Wind Engineering*, June 2015, Porto Alegre, Brazil.
3. De la Fortelle A., Xiangjun Qian X., Diemer S., Gregoire J., Moutarde F. Bonnabel S., Marjovi A., Martinoli A., Llatser I., Festag A., Sjöberg, K. “Network of Automated Vehicles: the AutoNet2030 Vision,” *Proc. of the twenty-first ITS World Congress*, September 2014, Detroit, U.S.A.
4. Lochmatter T., Heiniger N., and Martinoli A., “Localizing an Odor Source and Avoiding Obstacles: Experiments in a Wind Tunnel using Real Robots”. *Proc. of the 13th Int. Symp. on Olfaction and Electronic Nose*, April 2009, Brescia, Italy, AIP Conference Proceedings Series, Vol. 1137, pp. 69-72. Invited paper.
5. Cianci C. M., Lochmatter T., Pugh J., and Martinoli A., “Toward Multi-Level Modeling of Robotic Sensor Networks: A Case Study in Acoustic Event Monitoring”. *Proc. of the First Int. Conf. on Robot Communication and Coordination*, October 2007, Athens, Greece, ACM Int. Conf. Proc. Series Vol. 318, paper no. 12.
6. Nembrini J. and Martinoli A., “Robotique en essai: récents résultats et directions futures”. *Proc. of the Journées Nationales de la Recherche en Robotique 2007*, October 2007, Obernai, France (in French). Invited paper.
7. Reeves N., Poncet E., Nembrini J., Martinoli A., and Winfield A., “[VOILES|SAILS], Self-Assembling Intelligent Lighter-than-air Structures”. *Proc. of the Eight International Conference on Generative Art*, December 2005, Milano, Italy, pp. 297-311.
8. Martinoli A., Zhang Y., Prakash P., Antonsson E. K., and Olney R. D., “Towards Evolutionary Design of Intelligent Transportation Systems”. *Proc. of the Eleventh International Symposium of the Associazione Tecnica dell'Automobile on Advanced Technologies for ADAS Systems*, October 2002, Siena, Italy. Invited paper.

Peer-Reviewed Conference/Symposium/Workshop Extended Abstracts and Posters (6)

1. Erunsal I. K., Martinoli A., and Ventura R., “Decentralized Nonlinear Model Predictive Control for 3D Formation of Multirotor Micro Aerial Vehicles with Relative Sensing and Estimation”, *Proc. of the Int. Symp. on Multi-Robot and Multi-Agent Systems*, August 2019, New Brunswick, USA, pp. 176-178.

2. Mastrangeli M., Martinoli A., and Brügger J., “Three-Dimensional SU-8 Microtiles for Fluidic Self-Assembly”, *Proc. of the 39th International Conference on Micro and Nano Engineering*, September 2013, London, UK. One page abstract, contribution presented through an oral talk.
3. Pugh J., Segapelli L., and Martinoli A., “Applying Aspects of Multi-robot Search to Particle Swarm Optimization”. *Proc. of the Fifth International Workshop on Ant Colony Optimization and Swarm Intelligence*, September 2006, Brussels, Belgium. *Lecture Notes in Computer Science* (2006), Vol. 4150, pp. 506-507.
4. Martinoli A., Yamamoto M., and Mondada F., “On the Modeling of Bio-Inspired Collective Experiments with Real Robots”. WWW proceedings of the *Fourth European Conf. on Artificial Life ECAL-97*, Brighton, UK, July, 1997, contribution presented as a poster.
5. Schumacher P.M., Martinoli A., Bühner A., and Moser U., “In-vitro Study of the 2D Velocity Distribution and Volume Flow Using Quantitative C-Mode Doppler”. *Europ. Journal of Ultrasound, Euroson Abstracts*, Innsbruck, Austria, October 1993, Su. 1, Vol. 1.
6. Albani C., Martinoli C., Turi A., and Schärer C., “Representing Patterns of Parkinsonian Movements Using Sequential Neural Networks”. *Proc. of Int. Conf. of the IEEE Eng. in Med. and Biol. Soc.*, 1991, Orlando, FL, USA, Vol. 13, No. 3, pp. 1462–1463.

Technical Reports (6)

1. Martinoli A., “Evolution de stratégies d'exploration collective pour robots autonomes”. Technical report (in French), Postgraduate Course in Bio-Computing "Informatique et biologie: du modèle à l'outil", EPFL, Lausanne, March 1998.
2. Martinoli A., “Robot bipedos”. Technical report (in Spanish), Institute of Industrial Automation, CSIC, Madrid, July 1994.
3. Martinoli A., “Flussmodell: Release 2.0”. Technical report (in German), Institute of Biomedical Engineering and Medical Computing, ETHZ, Zürich, September 1993.
4. Martinoli A. and Turi A., “Balance einer Stange durch einen Roboter”. Technical report (in German), Institute of Robotics, ETHZ, Zürich, November 1992.
5. Martinoli A. and Turi A., “Computersteuerung eines Lasers”. Technical report (in German), Institute of Biomedical Engineering and Medical Informatics, ETHZ, Zürich, July 1991.
6. Martinoli A. and Turi A., “Die inverse Dynamik der Armbewegung”. Technical report (in German), Institute of Automatic Control, ETHZ and Laboratory of Movement Disorder, University Hospital of Zürich, Zürich, March 1991.

TECHNICAL TRANSFER

Spin-off companies

AirVeraCity Sàrl, a company focusing on urban air quality monitoring, founded in July 2018 by Kristian Lande, Thomas Lochmatter, and Ali Marjovi, see <https://airveracity.com/> for further details.

Hydromea SA, a company focusing on underwater robotics, founded in December 2014 by Alexander Bahr and Felix Schill, see <http://www.hydromea.com/> for further details.

Patents

Brugger J., Martin-Olmos C., Martinoli A., and Mermoud G., “Containers Assembled in Fluid and Corresponding Production”, US filed on April 20, 2009, extended on April 20, 2010.

Open source software:

SwisTrack: <https://sourceforge.net/projects/swistrack/> (multi-object tracking software for single and multi-camera systems); latest reference paper: Lochmatter T., Roudit P., Cianci C., Correll N., Jacot J. and Martinoli A., “SwisTrack - A Flexible Open Source Tracking Software for Multi-Agent Systems”, *Proc. of the 2008 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, September 2008, Nice, France, pp.4004-4010.

Khepera III Toolbox: <http://sourceforge.net/projects/khepera3toolbox/> (control function library for Khepera III robots)

Khepera IV Toolbox: <https://disal.epfl.ch/robots/khepera4> (control function library for Khepera IV robots; a reference dataset gathered with a Khepera IV robot is also available); reference paper: Soares J. M., Navarro I., and Martinoli A., “The Khepera IV mobile robot: performance evaluation, sensory data, and software toolbox,” *Proc. of the 2nd Iberian Robotics Conference*, November 2015, Lisbon, Portugal, *Advances in Intelligent Systems and Computing*, Vol. 417, 2015, pp. 767–781.

OmNet++ and NS3 plugins for the Webots simulator: <https://github.com/epfl-disal/ns34webots>; reference paper: Llatser I., Jornod G., A. Festag A., Mansolino D., Navarro I., and Martinoli A., “Simulation of Cooperative Automated Driving by Bidirectional Coupling of Vehicle and Network Simulators,” *Proc. of the IEEE Intelligent Vehicles Symposium*, June 2017, Redondo Beach, USA, pp. 1881-1886. The former version of this plugin was leveraging the OmNet++ open-source network simulator but it has been discontinued. The reference paper for this previous effort is: Cianci C., Raemy X., Pugh J., and Martinoli A., “Communication in a Swarm of Miniature Robots: The e-Puck as an Educational Tool for Swarm Robotics”. *Proc. of the SAB 2006 Workshop on Swarm Robotics*, September-October 2006, Rome, Italy. *Lecture Notes in Computer Science* (2007), Vol. 4433, pp. 103-115.

Automotive plugin for the Webots simulator: an early version can be found here: https://disal.epfl.ch/research/context_aware_its/simulator/; reference paper: Goyal S., Zhang Y., and Martinoli A., “A Realistic Simulator for the Design and Evaluation of Intelligent Vehicles”. *Proc. of the 2010 IEEE Int. Conf. on Intelligent Transportation Systems*, September 2010, Madeira Island, Portugal, pp. 1039-1044. A more updated and powerful simulation is now incorporated in the core of the Webots simulator and is the ultimate result of the CTI RO2IVSim project, as part of the technological transfer between academic and implementation partners (see also <https://disal.epfl.ch/research/RO2IVSim> for additional details).

Open source hardware and software:

e-puck: <http://www.e-puck.org/> (mobile robotic platform for education and research activities); reference paper: Mondada F., Bonani M., Raemy X., Pugh J., Cianci C., Klaptocz A., Magnenat S., Zufferey J.-C., Floreano D., Martinoli A., “The e-puck, a Robot Designed for Education in Engineering”. *Proc. of the 9th Conference on Autonomous Robot Systems and Competitions*, May 2009, Castelo Branco, Portugal, 1(1): pp. 59-65.

SELECTED INVITED RESEARCH SEMINARS & TALKS – excluding tutorials, talks associated to conference papers, fund raising, research reviews and audits, and previously mentioned outreaching activities

“Communication in Swarms: Forms, Strengths, and Limitations”, Lakeside Research Days 2019, Klagenfurt am Wörthersee, Austria, July 11, 2019. Plenary keynote talk.

“Multi-level Modeling for Swarm Robotics: Case Studies, Lessons, and Challenges”, International Conference on Swarm Intelligence (ANTS), Rome, Italy, October 31, 2018. Plenary keynote talk.

“Fluid-Mediated Stochastic Self-Assembly: Towards Bridging Centimetric and Sub-Millimetric Scales”, IROS 2018 Workshop on Multi-Robot Systems, Madrid, Spain, October 5, 2018.

“Fluid-Mediated Stochastic Self-Assembly: Towards Bridging Centimetric and Sub-Millimetric Scales”, Dagstuhl Seminar No. 18331 on Algorithmic Foundations of Programmable Matter, Schloss Dagstuhl, Leibniz-Zentrum für Informatik, Wadern, Germany, August 14, 2018.

“Robots for Odor Source Localization”, Brain and Mind Institute Research Day 2018, EPFL, Lausanne, June 13, 2018.

“High-Resolution Air Quality Sensing and Mapping in Urban Settings”, University of Rennes, Rennes, France, January 12, 2018.

“OpenSense: High-Resolution Air Quality Sensing and Mapping in Urban Settings”, RBCog joint IST-EPFL PhD program, seminar series, IST, Lisbon, Portugal, June 29, 2016.

“Modeling and Control of Distributed Stochastic Robotic Systems”, ICRA 2014, Multi-Robot Workshop, Hong Kong, June 1, 2014.

“Modeling and Control of Distributed Stochastic Robotic Systems”, IEEE Int. Conf. on Cybernetics 2013, EPFL, June 14, 2013. Plenary keynote talk.

“Modeling and Control of Distributed Stochastic Robotic Systems”, Seminar Series on Complex Systems, Bristol Centre for Complexity Sciences, University of Bristol, UK, May 21, 2013.

“Distributed Sensing using Resource-Constrained Multi-Robot Systems”, HES-SO Sion, Switzerland, March 6, 2013.

“Distributed Sensing and Coordinated Movement using Resource-Constrained Multi-Robot Systems”, joint seminar with S. Goyal, Mines ParisTech, Paris, France, January 23, 2013.

“Distributed Sensing using Resource-Constrained Multi-Robot Systems”, LABEX Seminar Series, Université de Technologie, Compiègne, France, January 22, 2013.

“Distributed Sensing using Resource-Constrained Multi-Robot Systems”, Institute for Systems and Robotics, Instituto Superior Técnico, Lisboa, Portugal, May 29, 2012.

“Engineering Methods for Distributed Robotics Systems that Scale in Node Size and Number”, seminar jointly prepared with G. Mermoud, ICRA 2012 Workshop on Many-Robots Systems: Crossing the Reality Gap, St.Paul, MN, USA, May 14, 2012.

“Distributed Sensing using Resource-Constrained Multi-Robot Systems”, Computer Science Colloquium Series, Harvard University, Cambridge, MA, U.S.A., December 1, 2011.

“Any-Time Low-Cost Localization for Large Scale Multi-Robot Systems: A Case-Study on Indoor Ultra-Wideband Positioning”, seminar jointly prepared with A. Prorok (actual speaker), IROS 2011 Workshop on Redundancy in Robot Manipulators and Multi-Robot Systems, September 26, 2011.

“Overview of DISAL Research Activities”, seminar at Laboratoire Systèmes et Transports (SET), University of Technology at Belfort-Montbéliard, Belfort, France, April 18, 2011 and at the Laboratoire d’Informatique, University of Franche-Comté, Montbéliard, April 19, 2011.

“Engineering Robotic Swarms: Strengths and Weaknesses of the Swarm Intelligence Paradigm”, Swarm Intelligence and Critical Behavior Workshop, Zentrum für interdisziplinäre Forschung (ZiF), University of Bielefeld, Germany, March 23, 2011.

“Multi-Level Modeling and Distributed Control for Miniature Robotic Swarms”, Workshop on Insect Self-Organization and Swarming, Mathematical Biosciences Institute (MBI), The Ohio State University, Columbus, OH, U.S.A., March 18, 2011.

“Distributed Sensing using Multiple Mobile Robots”, Lecture Series on Self-organizing Sensor-Actuator-Networks, Karlsruhe Institute of Technology, Germany, January 21, 2011.

“Distributed Artificial Noses on Wheels: Systems, Algorithms, and Applications”, NCCR-MICS Industrial Event, EPFL, January 18, 2011.

“From Distributed Robotic to Distributed Intelligent Systems: Achievements and Trends at DISAL”, Örebro University, Sweden, December 3, 2010.

“Distributed Intelligent Systems: Methods & Applications”, Rolex Laureate Workshop, EPFL, November 11, 2010.

“Research Activities in Intelligent vehicles at DISAL”, seminar jointly prepared with S. Goyal (actual speaker), PVF-EPFL meeting, Strasbourg, October 28, 2010.

“Probabilistic Odor Compass vs. Bio-Inspired Algorithms for Odor Source Localization”, seminar prepared jointly with T. Lochmatter, ICRA 2010 Workshop on Networked and Mobile Robot Olfaction in Natural, Dynamic Environments, Anchorage, May 7, 2010.

“Graph-Based Distributed Control for Miniature Mobile Robots endowed with Relative Positioning Capabilities”, seminar jointly prepared with S. Goyal (actual speaker), ICRA 2010 Workshop on Network Science and Systems: Issues in Multi-Robot Autonomy, May 7, 2010.

“Multi-Level Modeling Methods as a Tool for Design and Control of Swarm Robotic Systems and Beyond”, seminar jointly prepared with G. Mermoud (actual speaker), ICRA 2010 Workshop on Stochasticity in Robotics and Biology, Anchorage, May 7, 2010.

“Union is Strength but not for Free - Achievements and Grand Challenges in Distributed Intelligent Systems”, Inaugural Lecture EPFL, March 10, 2010.

“Modeling and Distributed Control Methods for Multi-Robot Systems: Achievements and Trends at DISAL”, Automatic Control Laboratory, EPFL, December 4, 2009.

“Multi-Level Modeling Methods as a Tool for Design and Control of Swarm Robotic Systems and Beyond”, joint seminar with G. Mermoud, Artificial Intelligence Laboratory, University of Zurich, October 20, 2009.

“From Distributed Robotic to Distributed Intelligent Systems: Achievements and Trends at DISAL”, Electrical Engineering Seminar Series, EPFL, April 27, 2009.

“Distributed Robotics: Achievements and Trends at DISAL”, Department of Electronics, Computer Science and Systems University of Bologna, Italy, April 15, 2009.

“Distributed Robotic Systems: A Peculiar Form of S&A Networks”, 2008 European Conference on Smart Sensing and Context, Zurich, ETHZ, October 30, 2008. Plenary keynote talk.

“Distributed Robotics: Achievements and Trends at DISAL”, final event of the European project EUPASS (Evolvable Ultra-Precision Assembly SystemS), Windisch, Switzerland, October 14, 2008.

“Ubiquitous Robotics”, joint seminar with F. Mondada, Archizoom Symposium on Explorations in Architecture – Technology, Lausanne, EPFL, September 25, 2008.

“Overview of Research and Teaching Activities at DISAL”, 2008 ENAC General Assembly, Lausanne, EPFL, September 17, 2008.

“Distributed Odor Localization using Miniature Mobile Robots”, Meeting French Competitvity Centers and Swiss National Research Centers, Lausanne, EPFL, September 11, 2008.

“Research Activities at SWIS: Distributed Robotic Systems and S&A Networks”, Solar Energy and Building Physics Laboratory, EPFL, LESO Lunchtime Lecture Series, EPFL, Lausanne May 16, 2008.

“A Multi-Level Modeling Methodology for Swarm Robotic Systems”, ACM AAMAS 2008 Workshop on Formal Models and Methods for Multi-Robot Systems, Estoril, Portugal, May 13, 2008.

“A Multi-Level Modeling Methodology for Swarm Robotic Systems”, Institute for Systems and Robotics, Instituto Superior Tecnico, Lisboa, Portugal, May 12, 2008.

“Swarm Intelligence: Principles, Secrets, and Applications”, SSODF-SGK yearly congress, Lausanne, November 15, 2007. Plenary keynote talk.

“A Nonspatial Multi-Level Modeling Methodology for Embedded Swarm-Intelligent Systems”, IEEE ICRA 2007 Workshop on Collective Behaviors inspired by Biological and Biochemical Systems, Rome, Italy, April 14, 2007.

“Overview R&D Activities at SWIS”, EPFL-IST Workshop for the perspective EPFL-IST Joint Doctoral Degree, EPFL, June 26, 2007.

“Swarm Robotics: Achievements and Trends”, Journées Nationales de la Recherche en Robotique 2007, Obernai, France, October 10, 2007. Plenary keynote talk.

“Distributed Odor Localization using Small-Scale Mobile Robots”, joint seminar with T. Lochmatter, Physical Electronics Laboratory, Swiss Federal Institute of Technology, Zurich, Switzerland, November 10, 2006.

“Research Activities at SWIS”, Workshop for the perspective EPFL Robotics Center, EPFL, November 14, 2006.

“Design and Optimization Methods for Swarm Robotic Systems”, Consiglio Nazionale delle Ricerche, Rome, Italy, October 2, 2006.

“Modeling, Control, and Optimization of Self-Organized Robotics Systems”, Delft Center for Systems and Control, Delft University of Technology, The Netherlands, June 7, 2006.

“Modeling, Control, and Optimization of Self-Organized Robotics Systems”, Università della Svizzera Italiana, Computer Science Department, Lugano, Switzerland, April 12, 2006.

“Self-Organized Robotic Systems: Design, Control, Modeling, and Optimization”, Otto-von-Guericke University, Mechanical Engineering Department, Magdeburg, Germany, February 27, 2006.

“Advances in Swarm Intelligence: Redefinition and Progress towards Embedded System Applications”, Università della Svizzera Italiana, Computer Science Department, Lugano, Switzerland, October 13, 2005.

“Multi-Level Abstraction for Modeling and Designing Self-Organized Embedded Systems”, Workshop on Building Mixed Societies of Animals and Robots, Les Treilles Foundation, Tourtour, France, April 22, 2005.

“Towards Engineering Methodologies for Self-Organized, Swarm-Intelligent, Embedded Systems”, Università della Svizzera Italiana, Computer Science Department, Lugano, Switzerland, October 25, 2004.

“Engineering Methodologies for Self-Organized, Swarm-Intelligent, Embedded Systems”, Swiss Federal Laboratories for Materials Testing and Research (EMPA), Dübendorf, Switzerland, August 25, 2004.

“Swarm Intelligence Principles applied to Integrated Micro-Nano-Systems”, EC consultation meeting on Research and Development Priorities in Integrated Micro- and Nano-Systems: Enabling Technological Families, Bruxelles, Belgium, April 19, 2004.

“Modeling and Optimization of Self-Organized Robotic Systems”, Workshop on Artificial Control of Mixed Societies “From Solitary Animals to Social Robots” organized by the Leurre IST European Project, Amsterdam, The Netherlands, March 11, 2004.

“Swarm Intelligence in Embedded Systems: Past, Current, and Future Directions”, Workshop on Space Applications of Bioengineering organized by the Department of Bioengineering and the NASA Jet Propulsion Laboratory, Pasadena, CA, January 30, 2004.

“Design and Control of Swarm-Intelligent, Embedded Systems”, Laboratory of Nonlinear Systems, Swiss Federal Institute of Technology, Lausanne, Switzerland, September 16, 2003.

“Design and Control of Swarm-Intelligent, Embedded Systems”, Department of Computer Science, University of California, Santa Barbara, CA, April 7, 2003.

“Design and Control of Swarm-Intelligent, Embedded Systems”, Center for Nonlinear Phenomena and Complex Systems, Université Libre de Bruxelles, Bruxelles, Belgium, March 12, 2003.

“Design and Control of Swarm-Intelligent, Embedded Systems”, Laboratoire d’Ethologie et Cognition Animale, Université Paul Sabatier, Toulouse, France, February 24, 2003.

“Design and Control of Swarm-Intelligent, Embedded Systems”, presentation of potential future activities of the Bio-Science and -Engineering Institute, a joint initiative Caltech-JPL, Caltech, Pasadena, CA, December 9, 2002.

“Evolutionary Design and Optimization of Intelligent Transportation Systems”, Delphi-Delco Electronic Systems, Malibu, CA, November 25, 2002.

“Towards Collective Robotic Art?”, Institut de recherche et création en arts et technologies médiatiques, UQAM, Montreal, Canada, November 6, 2002.

“Engineering Embedded Swarm Systems”, Institut de recherche et création en arts et technologies médiatiques, UQAM, Montreal, Canada, November 5, 2002.

“Engineering Embedded Swarm Systems”, USC Engineering Colloquium, Los Angeles, CA, November 1, 2002.

“Specialization in Swarm Systems using Distributed Learning”, CNSE research reviewed by the Academic Advisory Board, Caltech, Pasadena, CA, October 30, 2002.

“Engineering Embedded Swarm Systems”, Department of Computer Science, Swiss Federal Institute of Technology, Zurich, Switzerland, September 9, 2002.

“Engineering Swarm Embedded Systems”, Department of Electrical Engineering, University of Dortmund, Dortmund, Germany, June 27, 2002.

“Engineering Swarm Embedded Systems”, Dept. of Electrical and System Engineering, University of Pennsylvania, Philadelphia, PA, April 25, 2002.

“Engineering Swarm Embedded Systems”, The Edward S. Rogers Sr. Dept. of Electrical and Computer Engineering, University of Toronto, Toronto, Canada, April 8, 2002.

“Engineering Swarm Embedded Systems”, Sony Computer Science Laboratory, Paris, France, March 19, 2002.

“Engineering Swarm Embedded Systems”, Swiss Federal Institute of Technology, Institute of Automatic Control, Zurich, Switzerland, March 14, 2002.

“Engineering Swarm Embedded Systems”, Swiss Federal Institute of Technology, School of Computer and Communication Sciences, Lausanne, Switzerland, March 12, 2002.

“Engineering Swarm Embedded Systems”, Istituto Dalle Molle degli Studi sull’Intelligenza Artificiale (IDSIA), Lugano, Switzerland, March 7, 2002.

“Intelligenza a sciame”, KiTi2001 Prize Ceremony, Bellinzona, Switzerland, September 21, 2001.

“Towards Methodologies for Designing, Modeling, and Controlling Large Distributed Embedded Systems”, CSEM Alpnach, Switzerland, September 17, 2001.

“Towards a Methodology for Predicting, Controlling, and Optimizing Task-Oriented Interactions”, International Workshop on Social Robots, Lanzerote, Spain, June 30 – July 4, 2001.

“Swarm Intelligence in Embedded Systems: Distributed Sensing, Action, and Networking”, Alumni College Symposium 2001: Computing and Communication, Caltech, Pasadena, CA, June 22, 2001.

“Swarm Intelligence in Collective Systems: Distributed Sensing, Action, and Networking”, Sensor Networks Conference, CNSE and Lee Center for Advanced Networks, Caltech, Pasadena, CA, May 16-17, 2001.

“Probabilistic Modeling in Collective Robotics: From Case Studies towards a Unified Methodology”, University of Southern California, Institute of Information Science, Los Angeles, CA, November 12, 2000.

“Swarm Intelligence in Collective Robotics: From Case Studies towards Methodologies for Swarm System Design”, CNSE Retreat, Big Bear Lake, CA, October 14, 2000.

“Probabilistic Modeling in Collective Robotics: From Case Studies towards a Unified Methodology”, Cognitive Science Seminar, University of California, Los Angeles, CA, October 10, 2000.

“Probabilistic Modeling in Collective Robotics: From Case Studies towards a Unified Methodology”, University of Southern California, Institute of Robotics, Los Angeles, CA, September 10, 2000.

“Probabilistic Modeling in Autonomous Collective Robotics: From Case Studies towards a Unified Methodology”, Delphi-Delco Automotive Systems and Hughes Laboratories, Malibu, CA, July 27, 2000.

“Probabilistic Modeling in Autonomous Collective Robotics”, Istituto Dalle Molle degli Studi sull’Intelligenza Artificiale (IDSIA), Lugano, Switzerland, April 6, 2000.

OTHER SKILLS

Further education: highschool studies with Latin as specific option (maturità letteraria); successfully completed the first year of the School of Medicine in Varese at the University of Pavia, Italy, 1985 – 1986.

Languages: Italian (mother tongue), English (written and spoken), French (written and spoken), German (written and spoken), and Spanish (written and spoken).

Army: Officer, Swiss Army Medical Corps; 1993 – 1997: head of a platoon (30 men); 1997 – 1999: General Staff, total permanence in the army about 2 years.

PERSONAL

Citizenship: Switzerland and Italy.

Gender: Male.

Family: married, 2 children