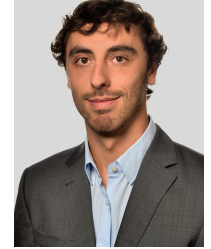


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 Swiss



## education

09.2016–08.2018	<b>M. Sc.</b> in Microengineering Specialization in robotics	Swiss Federal Institute of Technology Lausanne (EPFL)
09.2012–08.2016	<b>B. Sc.</b> in Microengineering	Swiss Federal Institute of Technology Lausanne (EPFL)
08.2009–07.2012	Bilingual Matura (German-English)	Gymnasium Thun Schadau

## work experience

10.2018– Today	<b>Swiss Federal Institute of Technology Lausanne (EPFL)</b> <i>Scientific assistant at DISAL, fulltime</i> Scientific assistant working on a cooperative project with an industrial partner focusing on multi-level modeling and its interest for control generation. My Tasks include not only mentioned research but also supervising student projects and teaching assistance.	Lausanne, Switzerland
02.2018–08.2018	<b>EiraTech Robotics</b> <i>Master's Project in Industry, fulltime</i> Carrying out my Master's Project (cf below) in the industrial environment of the company. Additionally diverse small internship-like tasks are fulfilled.	Dublin, Ireland
09.2013–01.2018	<b>Swiss Federal Institute of Technology Lausanne (EPFL)</b> <i>Student assistant, ~5hrs/week</i> Student assistant in various practice lessons including programming, logic systems, physics and hands-on labs in electro-mechanical conversion.	Lausanne, Switzerland
05.2012–10.2017	<b>Seilpark Gantrisch AG</b> <i>Rope park operator, ~1day/week</i> Instruction, supervision as well as potential rescue of guests	Rüeschegg–Heubach, Switzerland

## other experience

*Major projects are outlined in the attached project portfolio*

09.2014–01.2018	<b>Aeropoly, students association EPFL</b> <i>Webmaster, Treasurer</i> Renewal and maintenance of the website, accounting	Lausanne, Switzerland
09.2016–01.2018	<b>EPFL Rocket Team</b> <i>Responsible System Integration</i> Coordination of the technical progress of the different subsystems, as well as establishing job breakdowns, mass budget and further required documents.	Lausanne, Switzerland

## skills

<b>programming</b>	♥ C++/C, Java, C#, Matlab, HTML, CSS, Python, Assembler(Basics), PHP(Basics)
<b>tools</b>	OpenCV, Solidworks, Matlab, QT, Arduino IDE, Android Studio, Quartus, L <sup>A</sup> T <sub>E</sub> X, MS-Office, Altium
<b>academical knowledge</b>	Robotics, System control, Distributed Systems, Image processing and analysis, Machine learning, Speech processing, Computer-aided Design, Electrical circuits conception, Embedded Systems, System integration, Project management, Risk analysis, Logistics, Assembly techniques <i>has been achieved through curricular and extracurricular activities</i>

## languages

*Bilingual German-French*

<b>German</b>	Mother tongue
<b>French</b>	C2-C1 standard, Bachelor studies in French, living in the French part of Switzerland since 2012
<b>English</b>	C1 standard, Cambridge certificate of advanced english (2011), Master project in Ireland

**annex - Project Portfolio: Master Semester 1 to 4****Master Project in Industry**

- 02.2018–08.2018 **Distributed vs centralized path-planning and task-assignment solutions for a fleet of mobile warehouse robots.** EPFL, Lausanne, Switzerland/EiraTech robotics, Dublin, Ireland  
 ~1000 working hours, Grade 5.75/6  
 Evaluation of the two possible approaches of centralized versus distributed path-planning solutions taking into account EiraTech's requirements. Implementation into the existing EiraTech software of the most promising algorithm(s) to get as fast as possible from any start- to end-point within the warehouse, while avoiding the other robots.  
 Based on the working path-planning layer, an adapted task-assignment layer is then to be identified and implemented. Realized in C++ using Boost graph. Statistics parts are realized in Python using pandas.

**Semester projects**

- 02.2017–07.2017 **Interdisciplinary robot competition** EPFL, Lausanne, Switzerland  
 ~400 working hours, Grade 5.75/6  
 Development of a robot capable of moving autonomously within a 64 square meter arena, collecting PET bottles and bringing them back to a predefined place within the arena. This project has been assigned to teams of 3 persons with a budget of 3000 CHF per team. The competition, which we won, took place in June 2017 at EPFL. The main tasks done by me were the electronic design and implementation as well as part of the software (C++ with openCV).
- 09.2016–01.2017 **Gimbal camera with on-screen display** EPFL, Lausanne, Switzerland  
 ~300 working hours, Grade 5.5/6  
 Development of an on-screen display adapted for virtual reality goggles, featuring live first-person view from the drone, GPS-position based target indicator, as well as live information about drone parameter. Realized in C++ with openCV.

**In-Class projects**

- 09.2017–01.2018 **Lab on app development for tablets and smartphones** EPFL, Lausanne, Switzerland  
 ~100 working hours, Grade 6/6  
 Development of a (medical) android application for tablets and smartphones for sleep monitoring, able to get data from a smartwatch and a polar heart rate belt, and extract characteristics than could be mapped to sleep quality. Integration of a sleep Apnea detection algorithm provided. This project has been done in a team of 3 students. My main tasks included developing the smartwatch application as well as the testing and final adaption of the general app.
- 09.2017–01.2018 **Embedded systems** EPFL, Lausanne, Switzerland  
 ~40 working hours, Grade 5.5/6  
 Design and implementation of a FPGA-based system recovering image data from memory and sending it to a VGA display (through a triple video DAC). This project has been done in the scope of the embedded systems class in a team of 2 students. My main responsibility was the interface with the DAC converter.
- 02.2017–07.2017 **Image analysis and pattern recognition** EPFL, Lausanne, Switzerland  
 ~30 working hours, Grade 5.5/6  
 Development of a control system for a robot moving autonomously with the help of a ceiling mounted camera on a table featuring different forms with different colors, which have to be recovered in a predefined order. This project has been done in the scope of the image analysis and pattern recognition class in a team of 4 students. My main tasks included the color recognition and code integration. Realized in Matlab

- 09.2016–01.2017    **Mobile robots**    EPFL, Lausanne, Switzerland  
 ~30 working hours, Grade 5/6  
 Development of a complete control system for a mobile robot capable of moving autonomously in a predefined arena featuring obstacles, targets and adversaries, (which had to be avoided). This project has been done in the scope of the mobile robots class in a team of 4 students and its result has been tested in a simulation environment. Realized in C/C++.
- 09.2016–01.2017    **Product design in a team**    EPFL, Lausanne, Switzerland  
 ~40 working hours, Grade 5.25/6  
 Development of a handheld flashlight in a team of 6 students in the scope of the product design in a team class. This project had been funded with a budget of 500 Swiss francs per team. My main responsibility was the energy management as well as the system integration of the flashlight.
- 09.2016–01.2017    **Product design: managing projects and innovation**    EPFL, Lausanne, Switzerland  
 ~30 working hours, Grade 5/6  
 Development of the software for a pedometer for a smartwatch. This project has been assigned to teams of 4 students each. My tasks included the software for data acquisition including a Kalman filter, as well as the final integration of the different code parts.

## Extra-curricular projects

- 01.2017–06.2018    **Spaceport America Cup 2018**    New Mexico, USA/Lausanne, Switzerland  
 ~600 working hours, Award for Technical Excellence  
 Development of a sounding rocket featuring air-brakes in order to attain as precise as possible 10'000 feet. Participation at the American Spacecup 2018 is intended. I was responsible for the system integration for the whole rocket, this includes not only job breakdown of the design into sub-tasks, but also tasks such as time management for the team, risk assessments, as well as writing specifications, concept of operations and other documentation of the project. Due to my absence from the EPFL campus (Master project in Dublin, Ireland) I changed in January 2018 into the logistics team.
- 09.2016–07.2017    **Spaceport America Cup 2017**    New Mexico, USA/Lausanne, Switzerland  
 ~300 working hours, 8th place out of 90  
 Development of a sounding rocket attaining as precise as possible 10'000 feet in order to participate at the Spaceport America Cup 2017, which took place in June 2017 at the spaceport America in New Mexico. My main tasks included the development (in Solidworks) and realization of one of the separation mechanisms as well as on-site manipulation of the recovery part (including recovery avionics and parachutes) during the competition.