

Marie Ethvignot

EPFL Student

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Master student in Robotics at EPFL with a focus on space technologies seeking an internship starting in February 2025.

EDUCATION

Master of Science in Robotics/ Minor in Space Technologies 2023 - current
Swiss Federal Institute of Technology in Lausanne (EPFL) - Grade: 5.13/6

Bachelor of Science in Microengineering 2019 - 2023
Swiss Federal Institute of Technology in Lausanne (EPFL) - Grade: 4.85/6

Relevant Courses: Mobile Robotics, Aerial Robotics, Machine Learning, Applied Data Analysis, Computer Vision, Model Predictive Control, Legged Robots, Project Management and risk analysis, Spacecraft design and System Engineering.

EXPERIENCE

Teaching Assistant, EPFL (Lausanne, Switzerland) 2022 - current
Teaching Assistant in three courses: Numerical Analysis, Materials Science and Microfabrication Technologies.

Clean Space Training Course, European Space Agency (ESA) (Redu, Belgium) 03/2024
One-week training course given by ESA experts regarding key approaches to consider and reduce the environmental impact across the entire life cycle of a space mission and to minimize the production of space debris.

Engineer Assistant in the Mechanical Department, ARESIA (Paris, France) summer 2023
Two-month summer job at ARESIA, a French international group specialized in the design and manufacture of equipment for the civil and defense aeronautical industry. Development and optimization of an innovative program in Python to automate the calculation chain on ANSYS Mechanical models for the Mechanical department of the group.

Machining training, Ecole technique des métiers de Lausanne (ETML) (Lausanne, Switzerland) 08/2022
Two-week hands-on training at a technical school specialized in mechanical manufacturing to learn how to use the main machines for processes such as milling, turning, drilling, tapping or assembling.

Summer school, Brown university (Providence, RI, USA) 07/2018
Participation in a summer school (for high-school students) focusing on scientific courses in an international and multicultural environment.

PROJECTS

Gas source localization with Gaussian Markov Random Field fall 2024
Distributed Intelligent Systems and Algorithms Laboratory, EPFL

Integration of an optimization-based field estimation algorithm (Gaussian Markov Random Field) to Gas Source Localization tasks of a mobile robot.

Peering behind dust storms on Mars with single-photon cameras spring 2024
Advanced Quantum Architecture Laboratory, EPFL

Research, test and comparison of the performance of state-of-the-art Visual Odometry (VO) algorithms in the case of dynamically occluded scenes for robotic space exploration; the overall goal being to develop a VO algorithm robust to extreme conditions, using the Single Photon Avalanche Diode cameras developed by the laboratory.
Creation of a dataset to evaluate the performances and improve the chosen algorithm.

EXTRACURRICULAR WORK

Member of the EPFL Zero Emission Group (Lausanne, Switzerland) *09/2024 - current*
Learning how to use Life Cycle Assessment (LCA) tools, in order to perform one on a project of the EPFL Rocket Team, to assess the environmental impact of this project, during every phase of its life.

Member of the space robotics student association "EPFL Xplore" (Lausanne, Switzerland) *2021 - 2022*
Interdisciplinary student association aiming at building a Mars rover for the annual European Rover Challenge. Part of the Avionics team, in particular in charge of designing the Printed Circuit Boards of the rover.

President of the student association "FestiFood", EPFL (Lausanne, Switzerland) *2023 - 2024*
Organization of the EPFL Food Festival, an event organized by students offering food, live music and games. Supervision of the overall organization, management of the sub-teams and leader of the sponsoring team.

Member of the CTBTO Youth Group (Vienna, Austria) *2018-2021*
Following a one-week observation internship, joined the Youth Group that supports and promotes the Comprehensive Nuclear-Test-Ban Treaty Organization, an international organization which aims at putting an end to nuclear explosions.

Coach for first-year students, EPFL (Lausanne, Switzerland) *2020 - 2021*
Mentoring of first-year students and organization of social events.

SKILLS

Languages	French (Native speaker), English (C1), German (B2), Arabic (A1)
Programming languages	C++, Python, MATLAB
Software	CATIA, ATMEL STUDIO, KiCad, Ansys Mechanical, Webots, LaTeX, Microsoft Office
Hobbies	Piano, running, skiing
Soft	Flexibility and adaptability, Problem solving, Oral and written communication, Forward thinking, Result orientation