Mathéo Taillandier

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Looking for an internship in Robotics

Profile

Robotics Master's student at EPFL with a strong foundation in microengineering and deep interest in autonomous systems, reinforcement learning, and real-world deployment. Curious and hardworking, I have lived in three different countries, developing the ability to adapt swiftly to new environments. Always pushing my limits, I quickly learn things and love to dive into unknown subjects, easily learning new techniques and tools to overcome challenges.

Education

Ecole Polytechnique Fédérale de Lausanne *Lausanne, Switzerland*
Master in Robotics (orientation: mobile robotics) *Sept 2024 – Present*

- **Coursework:** Model Predictive Control, Reinforcement Learning, Learning and Adaptive Control, Mobile Robotics (Computer vision, Global Planning, Filters, Control), Machine Learning, Legged Robots

Ecole Polytechnique Fédérale de Lausanne *Lausanne, Switzerland*
Bachelor in Microengineering, GPA: 4.88/6 *Sept 2021 – June 2024*

- **Coursework:** Advanced Mathematics, Numerical analysis and optimisation, Object-oriented programming, Statistics for data science, Physics, Microcontrollers, Electronics, Materials, Conception of Mechanisms

Lycée Rochambeau - The French International School *Washington D.C., USA*
Baccalauréat OIB Mention Très Bien, GPA: 17.73/20 *Sept 2018 – July 2021*

Walt Whitman High School *Washington D.C., USA*
High School Diploma *Sept 2017 – July 2018*

Experience and Projects

Power Grid Vulnerability Detection with RL *Lausanne, Switzerland*
IMOS Laboratory, EPFL *April 2025 - present*

- Developed a graph Reinforcement Learning framework to identify weaknesses in power grids by simulating adversarial attacks. Focused on maintaining grid stability and preventing blackouts.

Aerial Robotics *Lausanne, Switzerland*
EPFL *Feb 2025 - May 2025*

- Developed an algorithm to identify gate positions in 3D space from a single RGB drone camera.
- Designed a path planning algorithm based on minimum jerk trajectory to ensure smooth motion.
- Tested both in simulation and real world using Python and the CrazyFlie drone.

Deep Learning for Autonomous Vehicles *Lausanne, Switzerland*
EPFL *Feb 2025 - May 2025*

- Developed a Deep Neural Network to learn how to predict the future trajectory of a car from history information and a dashcam image.
- Used auxiliary task training and real images to improve the capacity of the Neural Network and test its robustness.

Car Control with Model Predictive Control *Lausanne, Switzerland*
EPFL *Nov 2024 - Jan 2025*

- Model Predictive Control of a car capable of overtaking, adjusting its speed, and avoiding collisions.
- Used Linear MPC, LQR, Robust Tube MPC, and Nonlinear MPC.

Dielectric Elastomer Actuator (DEA) Research Project *Neuchâtel, Switzerland*
Microcity, EPFL *Sept 2024 – Jan 2025*

- Characterization of a DEA using a test bench (i.e. DAQ, Oscilloscope) and Supervised Learning

- Micrometer control of a DEA through Reinforcement Learning and PID.

Bipedal/Quadrupedal Robot Control Projects *Lausanne, Switzerland*
EPFL *Sept 2024 - Jan 2025*

- Designed robust bipedal robot walking control using Divergent Component of Motion
- Designed robust quadrupedal robot walking/running control using Reinforcement Learning and Central Pattern Generator

Autonomous Vehicle Project *Lausanne, Switzerland*
EPFL *Sept 2024 - Dec 2024*

- Programmed a mobile robot to navigate through an environment with obstacles to reach a given goal.
- Used Computer Vision on external camera and robot-computer communication to increase computing power and give additional information.
- Used Dijkstra's algorithm and Potential Fields for path planning and obstacle avoidance.

Technical Director *Lausanne, Switzerland*
Fréquence Banane, EPFL *May 2024 - May 2025*

- Responsible for maintaining and improving the servers for a radio association.
- Responsible for the audio and video systems of the radio studios and multiple events.
- Responsible for leading and coordinating multiple teams throughout the year to organize various events.

Technical Consultant *Lausanne, Switzerland*
Junior Entreprise, EPFL *Sept 2023 - Dec 2023*

- Wrote a report concerning the design and deployment of a technical product for a startup.

Skills and Languages

Programming Languages: C++, C, Python, Matlab, Assembly, HTML, CSS

Technologies: PyTorch, Keras, Linux Ubuntu, OpenCV, Git, OpenAI Gym, Stable-Baselines 3, Catia, Simulink, LTspice, Streamlit, FastAPI, Excel, Microcontrollers, Communication Protocols.

Languages: French (Native), English (Bilingual), Spanish (Intermediate)