








ThomasKimble

MSc in Robotics and Space Technologies

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Education

MSc in Robotics


École Polytechnique Fédérale de Lausanne

 Sep 2019 - Ongoing  Lausanne, Switzerland

- Major in Robotics with Mobile Robotics orientation
- Minor in Space Technologies

BSc in Microengineering

École Polytechnique Fédérale de Lausanne

 Sep 2015 - Jul 2019  Lausanne, Switzerland

- Machining course included in curriculum

French General Baccalaurate

Collège du Léman

 Sep 2001 - Jun 2015  Versoix, Switzerland

- Scientific orientation
- Highest distinction

Hard Skills

Programming Languages:

- Python, C, C++, Java, MATLAB, HTML/CSS/Javascript

Robotics:

- ROS, mobile robotics, aerial robotics, embedded systems, control systems, navigation algorithms, path planning

Data Science:

- Applied data analysis, data visualisation, pandas, SQL, PySpark, networkx

Artificial Intelligence:

- **Machine learning:** Clustering and Classification algorithms, scikit-learn, neural networks
- **Deep learning:** PyTorch, deep and neural networks
- **Computer Vision:** Image processing techniques, OpenCV, Mediapipe

Soft Skills

Studies:

Work Ethic Problem Solving Curiosity
Alternative Thinking Presentation Skills
Group Work Leadership Patience

Music:

- Performed guitar, drums and piano as part of multiple bands, orchestras as well as solo

Creativity Stage Presence Attention to Detail

Languages

English and French



German






Projects

Robotics


Wheeled Robotics

 Sep 2019 - Sep 2020  EPFL, Lausanne, Switzerland

- Implementation of computer vision, path planning, global and local navigation, and filtering for use of multiple Thymio robots. 
- Development of a line following algorithm using a PID controller with the e-Puck 2 robot - Nominated for the GCTronic Award. 
- Design of a two wheel robot in ROS with implementation of waypoint navigation and obstacle avoidance. 

Aerial Robotics - Laboratory of Intelligent Systems



 Sep 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- Analysis of the effect of limited field of view on drone swarms using a state of the art predictive trajectory generation and collision avoidance algorithm 

Data Science and Software Engineering


Applied Data Analysis

 Sep 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- Use of regression analysis, supervised learning and applied machine learning to train and analyse datasets.
- Data analysis scientific paper replication, and extension. 
- Analysis of the effect of Mobility on Friendship using a different models to predict how many friendships Foursquare users will make or break in a 22 month time period 


Intelligent Agents

 Sep 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- Development of intelligent agents and multi-agent systems for optimisation of a pick-up and delivery problem. 

Embedded Systems

 Sep 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- Development of a game on the Nintendo DS microprogrammed embedded system. Knowledge of the system architecture and game design. 

Space Technologies

Constellation of High Energy Swiss Satellites

 Feb 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- EPFL Spacecraft Team's CHES Mission Electrical Power System pole leader.
- Understanding of a Space Mission and implementing an EPS within a CubeSat platform.

Image Processing for Earth Observation

 Sep 2020 - Jan 2021  EPFL, Lausanne, Switzerland

- Identification of rooftops for optimal solarpanel energy production using Gaussian Maximum Likelihood estimation.