

Hugo Mouton

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🔗 unmoutonperdu.github.io in hugo-mouton- 🔄 UnMoutonPerdu

Education

Polytechnique Montréal

M.Eng. in Computer Science

Montréal, QC, CA

Sept 2023 - Now

- GPA: 3.8/4.0
- Double degree with ISAE-Supaero. Recruited on results through it
- **Coursework:** Unsupervised Learning and Time Series, Stochastic Processes, Deep Learning, Machine Learning, Artificial Intelligence: Methods and Algorithms, Natural Language Processing, Graph theory

ISAE-Supaero

M.Sc. in Aerospace Engineering

Toulouse, FR

Sept 2021 - Now

- GPA: 3.8/4.0
- Recruited through the Mines-Ponts competitive examination
- **Coursework:** Fluid mechanics, Strength of materials, Artificial intelligence, Computer language paradigms, Advanced topics in mathematics

Lycée Louis Le Grand

Preparatory Class

Paris, FR

Sept 2019 - June 2021

- MPSI then PSI* student
- Admitted to the preparatory class after passing the French science baccalaureate with distinction

Research Experiences

Research Internship

École polytechnique computer laboratory (LIX)

Palaiseau, FR

April 2023 - July 2023

- Verification of neural network-based controllers
- Approximation and compression of ReLU-based neural networks
- Implementation of a library for modeling tropical polyhedra and study their propagation through a neural network ([GitHub repository](#) [🔗](#))

Professional Experiences

Software Development Internship

Boréal SAS

Castanet-Tolosan, FR

July 2022 - August 2022

- Preparation of flight missions
- Drone monitoring during flight
- Development of a flight data analysis tool
- Development of a graphical user interface for presenting results

Computer center console team leader

ISAE-Supaero

Toulouse, FR

March 2022 - March 2023

- Service to computer center users
- Management of the console operator team, maintenance and formation
- Supervision of ISAE-Supaero's IT equipment in conjunction with teaching staff
- Helping to set up lectures, practical courses and activities linked to the master's program

Honors and Awards

- Finalist in the Prologon 2022 competition
- Finalist in the French Robotics Cup with the ISAE-Supaero team in 2022 and 2023
- Recipient of the Fondation Georges Besse Excellence Scholarship since 2021

Projects

Simulation of particle collisions

[GitHub repository](#) [Post on my blog](#)

- Developed basic implementation of a simulation of the movement of particles confined in a box supposing subjected only to elastic collisions
- Two Implementations in C using SDL

Compilers

[Shakespeare compiler](#) - [Chicken compiler](#)

- Two compilers of two esoteric programming languages
- Implementation of the different compiler architecture blocks

Package for polyhedra manipulations

[GitHub repository](#)

- Implementation of the external representation of tropical polyhedra
- Code in Julia

3D mapping of the ISAE-Supaero campus

- Guiding a rover equipped with a LiDAR sensor for point cloud generation
- Use of MATLAB to place and filter point clouds and generate 3D representations

Modelling and preliminary study of a microsatellite

- Study to design a cubesat satellite to monitor the oceans and detect the presence of aquatic life. Definition of technical aspects concerning its orbiting and trajectory. Choice of sensors and design materials.
- Use of Scilab for numerical simulations and calculations, and VTS for spatial data visualization

Activities

Internal Communications Manager of Sports Association

Toulouse, FR

ISAE-Supaero

February 2022 - February 2023

- Maintaining relations between sports clubs and the association
- Search for partnerships for sporting events
- Automation of registrations and payments via the association's website
- Website restructuring and maintenance ([AS ISAE-Supaero website](#))

President of the robotics club

Toulouse, FR

ISAE-Supaero

May 2022 - May 2023

- Search for partners to finance the club
- Team management and school communications
- Recrutement and formation of new club members in their respective poles

Skills

Languages:

- **French:** Native
- **English:** Fluent - TOEFL: 95/120
- **Spanish:** Academic level

Programming languages: Python, C, C++, Java, R, Scala, Prolog, OCaml, Matlab, HTML/CSS/JavaScript, SQL

Technologies: Microsoft 365, TIBCO Statistica, LaTeX, Linux, ROS (Robot Operating System)