Arthur **Louette**

PhD candidate · Machine Learning

☐ (+32) 470082899 | ✉ louettearthur@gmail.com | ☐ LouetteArthur | ☐ Arthur Louette

Personal statement

I am a PhD student in Machine Learning at the Montefiore Institute (ULiège), working on **reinforcement learning for robotic systems**, with an emphasis on quadrotor control. My research combines **physics-based simulation**, **multi-agent reinforcement learning**, and **sim-to-real transfer** to enable reliable learning in safety-critical scenarios such as drone interception.

Education

Ph.D. in Machine Learning   *Liège, Belgium*

Montefiore Institute, University of Liège   *Aug. 2023 - Now*

- Advisor: Damien Ernst.
- Research interest: Reinforcement Learning and Robotic Learning

Master in Data Science and Engineering   *Liège, Belgium*

University of Liège   *Sep. 2021 - Jun.2023*

- Master's Thesis: Reinforcement learning to improve robotic throws.
- Internship at the GeMMe laboratory. Feb. 2023 - Jun. 2023
- Magna Cum Laude

Bachelor in Engineering   *Liège, Belgium*

University of Liège   *Sep. 2018 - Jun.2021*

- Focus on computer science and AI.

Research projects

Reinforcement Learning for quadrotors in Pursuit-Evasion games   *Liège, Belgium*

Partners: KTH Royal Institute of Technology   *Jun. 2025 - Now*

- Multi-agent reinforcement learning for adversarial interactions between pursuing and evading UAVs under realistic dynamics and sensing constraints.
- Designing a simulation environment (Isaac Sim) and transferring learned controllers to quadrotor hardware.

Multi-agent reinforcement learning for controlling weapon stations against drones   *Liège, Belgium*

Partners: FN Herstal, John Cockerill Defense   *Mar. 2024 - Now*

- Development of an advanced system employing adversarial multi-agent reinforcement learning for controlling weapon stations to counter drone threats. Responsibilities include designing and implementing machine learning algorithms capable of dynamically adapting weapon station behaviors to counter evolving drone tactics and strategies.

Reinforcement learning to improve delta robot throws for sorting scrap metal   *Liège, Belgium*

Partner: GeMMe   *Feb. 2023 - Mar. 2024*

We have built a simple robotic simulator of the line for learning a robot controller and transferred it to the real robot such that it can throw the scrap metals in bins to sort them as fast as possible using reinforcement learning.

Work Experience

Research Engineer   *Liège, Belgium*

Montefiore institute, University of Liège   *Aug. 2023 - Now*

- Responsible for the research projects with industrial consortia of Belgian companies and labs.
  - FN Herstal.
  - John Cockerill Defence.
  - GeMMe: Georesources, Mineral Engineering and Extractive Metallurgy.

Student Trainee   *Liège Belgium*

G EMM E L AB   *Feb. 2023 - Jun. 2023*

• Development of a reinforcement learning algorithm to sort scraps efficiently with ABB delta robots.

Student Job - Machine operator   *Lorcé, Belgium*

B RU C HEVRON S.A.   *Feb. 2017 - Apr. 2023*

• Supervision of a water bottling line.

Teaching

2024-2026 **Reinforcement Learning,** Responsible for supervising lectures and Python projects   *Teaching assistant*

Skills

Programming	Python, C, LaTeX, C++, Java, R, Bash, Matlab
Software development	Git, Docker.
Libraries	PyTorch, Numpy, Pandas, Matplotlib, RL libraries,...
Languages	French(native), English(professional proficiency), Dutch (limited proficiency)

Personal Experience

R.C.S. Xhoris   *Xhoris, Belgium*

F OOTBALL C OACH   *Jul. 2023 - Present*

• Youth coach (ages 9–13); amateur football player for 15 years.

Maison des Jeunes de Ferrières   *Ferrières, Belgium*

M EMBER (2020–2021) AND P RESIDENT (2021–P RESENT)   *Oct. 2020 - Present*

• Lead a local non-profit youth association, coordinating the team, liaising with local authorities, and organizing events.