

Quentin Gallouédec

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EDUCATION

- 2020– **Ph.D. student in Computer Science/Deep Reinforcement Learning**
Dissertation: Effective exploration for reinforcement learning in the context of highly sparse reward environments.
Supervisor: Associate Prof. Emmanuel Dellandréa
- 2019-20 **M.S. in Electronics, Energy, Electricity and Automation**
Dissertation: Mixed-Precision in Graphics Processing Units
Supervisor: Prof. Ian O'Connor
- 2016-20 **Diplôme d'Ingénieur (M.S. and B.S. in Engineering Sciences),**
École Centrale de Lyon, France
Majoring in Computer Science
- 2014-16 **Classe Préparatoire (equivalent to first two years of B.S.)**
Lycée Clemenceau, Nantes, France

RESEARCH INTEREST

I focus on the design of robust reinforcement learning algorithms, especially for highly sparse reward environments. I am currently exploring efficient exploration with the Go-Explore paradigm and curiosity-based methods.

PUBLICATIONS

Workshop Publications

- 2021 Gallouédec, Q., Cazin, N., Dellandréa, E., and Chen, L. “Multi-Goal Reinforcement Learning environments for simulated Franka Emika Panda robot.” *4th Robot Learning Workshop: Self-Supervised and Lifelong Learning Workshop @ NeurIPS 2021*, arXiv:2106.13687

Reports and blog posts

- 2021– Gallouédec, Q. “Reinforcement Learning Review Series”, Toward Data Science, Medium [Web blog posts]. Retrieved from qgallouedec.medium.com/
- 2020 Gallouédec, Q. “Mixed-Precision in Graphics Processing Units.” *arXiv preprint*, arXiv:2110.12794
- 2020 Gallouédec, Q. “Deep Reinforcement Learning for soft objects grasping” Research internship report. qgallouedec.github.io/files/TFErappport.pdf

SUPERVISED STUDENT PROJECTS

- 2021 Investigation of an adversarial approach for reinforcement learning with a robotic arm (2 M.S. students)
- 2021 Analysis and development of an evaluation environment for reinforcement learning methods for robotics (2 M.S. students)
- 2021 Ignition for High performance simulation of soft object grasping (M.S. intern)
- 2021 Simulation and characterisation of a tactile sensor for learning robotic tasks. (4 M.S. students)
- 2020 Soft-information for indoor positioning of firefighters (14 M.S. students)

PROFESSIONAL EMPLOYMENT

- 2019-20 **Mathematics Interrogator, Lycée Aux Lazaristes**
For students in *classe préparatoire* (equivalent to the first two years of B.S.), preparing for the entrance exams to the most prestigious French universities.
- 2018-19 **Research and Development Officer, Paris Fire Brigade**
Machine learning for the prediction of rescue presentation time and optimization of operational coverage.
Realization of a prototype of indoor communication and localization system, based on LoRa/UWB technologies designed for the use of firefighters in constrained environments.
- 04-08/2018 **Research intern, Polytechnique Montréal, Canada**
Supervisor: Prof. Maxime Raison
Description: development of a custom-made 3D printed robotic arm for the assistance of child amputees. Implementation of the acquisition chain (stereovision), the control chain and the learning of movements.

MISCELLANEOUS

- 2021– Official author in Toward Data Science (603k followers).
- 2019 National Defence Medalist for my commitment as a firefighter.
- 2019 Letter of congratulations from the Chief of Staff of the Paris Fire Brigade.
- 2019 Finisher of my first marathon (42.195 km; 3h19min) in Paris.
- 2012 Winner of *Science et vie junior magazine's Innovez* national contest.
- 2011 Judo black belt, former national level athlete.

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