Hamon Gautier

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Education

2016 **Baccalauréat Général Scientifique**, *Lycée Arthur Rimbaud*, Sin-Le-Noble, *With highest honors*.

2016–2017 **Classe préparatoire MPSI**, *Lycée Faidherbe*, Lille.

2017–2018 **French Scientific Preparatory Classes MP***, *Lycée Faidherbe*, Lille.
Succeeded in the written exam of Polytechnique,ENS Rennes

2018-2021 **Engineer's degree (GPA 4.)**, *Télécom Paris*, Paris, Top engineering school.
Signal processing for artificial intelligence,Stochastic modelisation and scientific computation .

2020-2021 **Master MVA (with highest honors)**, *Institut Polytechnique de Paris*, Palaiseau.
Double diploma

2022-current **PhD student**, *Inria FLOWERS team*, Bordeaux, Modeling the eco-evolutionary origins of open-ended skill acquisition.
Reinforcement learning, evolutionary algorithm, meta learning, multi agent RL, Self-organization

R&D Work Experience

2024 **Visiting scholar**, *Ricard Solé's complex system lab UPF*, 3 months, Emergence of Agriculture in simulations of learning agents.
Machine learning, Complex systems, Major transition, Multi agent RL

2021 **Research Intern** , *INRIA Team FLOWERS*, 6 months, Emergence and control of sensorimotor agency in cellular automata : Interactive article.
Machine learning, Self-organization, Complex systems, Cellular automaton ,Sensorimotor control

Languages

French Mother tongue

English C.1

Spanish A.2

Technical skills

Programmation:Python,R,C

Machine Learning: JAX,Pytorch,SKlearn,Keras

DataBase: SQL, Excel

Text editor: Latex, Word

Publications

Plantec, E. Hamon, G. Etcheverry, M. Oudeyer, P-Y. Moulin-Frier, C. , Chan, BWC.; 2023. "Flow-Lenia: Towards open-ended evolution in cellular automata through mass conservation and parameter localization." Proceedings of the ALIFE 2023 **Best paper award**

Hamon, G., Etcheverry, M., Chan, BWC., Moulin-Frier, C., Oudeyer, P-Y., (2024). Dis-

covering Sensorimotor Agency in Cellular Automata using Diversity Search. arXiv preprint arXiv:2402.10236 Blogpost https://reytuag.github.io/post–diffLeniaTest/public/ (under submission)

Hamon, G., Nisioti, E., Moulin-Frier, C., 2023. Eco-evolutionary Dynamics of Non-episodic Neuroevolution in Large Multi-agent Environments. In Proceedings of the Companion Conference on Genetic and Evolutionary Computation (GECCO '23 Companion)

Bornemann*, R., Hamon*, G., Nisioti, E., Moulin-Frier, C., (2023). Emergence of Collective Open-Ended Exploration from Decentralized Meta-Reinforcement Learning. arXiv preprint arXiv:2311.00651. Presented at Agent Learning in Open-Endedness (ALOE) Neurips workshop

Léger*, C., Hamon*, G., Nisioti, E., Hinaut, X., Moulin-Frier, C. (2024). Evolving Reservoirs for Meta Reinforcement Learning. In: Smith, S., Correia, J., Cintrano, C. (eds) Applications of Evolutionary Computation. EvoApplications 2024. Lecture Notes in Computer Science, vol 14635. Springer, Cham. https://doi.org/10.1007/978-3-031-56855-8_3

Nisioti*, E., Masquil*, E., Hamon*, G. ; Moulin-Frier, C.. (2023). Autotelic Reinforcement Learning in Multi-Agent Environments. Proceedings of The 2nd Conference on Lifelong Learning Agents (Collas), in Proceedings of Machine Learning Research. 232:137-161. Available from https://proceedings.mlr.press/v232/nisioti23a.html.

School Projects

2021 MVA : GAN with several discriminators at different scales

2021 MVA : 1st place at Challenge on Land cover predictive modeling from satellite images

2020 MVA : learning to act by predicting the future

2020 MVA RL: Reward shaping, especially with meta learning