

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**, *Télécom Paris*, Paris.
Signal processing for artificial intelligence, Stochastic modelisation and scientific computation .
- 2020–2021 **Master MVA (with highest honors)**, *Institut Polytechnique de Paris*, Palaiseau.
Double diploma
- 2022–2025 **PhD**, *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

Languages

French Mother tongue
English C.1
Spanish A.2

Technical skills

Programming: Python, R, C

Machine Learning: Pytorch, JAX, SKlearn, Keras

Text editor: Latex, Word

Publications ([Scholar link](#))

- [1] Gautier Hamon. ***Towards open-ended dynamics in Artificial Life and Artificial Intelligence: an eco-evo-devo perspective***. PhD thesis, Université de Bordeaux, 2025.
- [2] Gautier Hamon*, Mayalen Etcheverry*, Bert Wang-Chak Chan, Clément Moulin-Frier, and Pierre-Yves Oudeyer. Discovering sensorimotor agency in cellular automata using diversity search. *arXiv preprint arXiv:2402.10236*, 2024. **To appear in Sciences Advances**.
- [3] Erwan Plantec, Gautier Hamon, Mayalen Etcheverry, Pierre-Yves Oudeyer, Clément Moulin-Frier, and Bert Wang-Chak Chan. Flow-lenia: Towards open-ended evolution in cellular automata through mass conservation and parameter localization. In *Artificial Life Conference Proceedings 35*, volume 2023, page 131. MIT Press, 2023. **Best paper award**.
- [4] Richard Bornemann*, Gautier Hamon*, Eleni Nisioti, and Clément Moulin-Frier. Emergence

of collective open-ended exploration from decentralized meta-reinforcement learning. In *ALOE 2023-Agent Learning in Open-Endedness workshop at NeurIPS 2023*, 2023.

- [5] Gautier Hamon*, Eleni Nisioti*, and Clément Moulin-Frier. Eco-evolutionary dynamics of non-episodic neuroevolution in large multi-agent environments. In *Proceedings of the Companion Conference on Genetic and Evolutionary Computation*, pages 143–146, 2023.
- [6] Sina Khajehabdollahi, Gautier Hamon, Marko Cvjetko, Pierre-Yves Oudeyer, Clément Moulin-Frier, and Cédric Colas. Expedition & expansion: Leveraging semantic representations for goal-directed exploration in continuous cellular automata. *arXiv preprint arXiv:2509.03863*, 2025. Accepted at Alife 2025.
- [7] Corentin Léger*, Gautier Hamon*, Eleni Nisioti, Xavier Hinaut, and Clément Moulin-Frier. Evolving reservoirs for meta reinforcement learning. In *International Conference on the Applications of Evolutionary Computation (Part of EvoStar)*, pages 36–60. Springer, 2024.
- [8] Thomas Michel, Marko Cvjetko, Gautier Hamon, Pierre-Yves Oudeyer, and Clément Moulin-Frier. Exploring flow-lenia universes with a curiosity-driven ai scientist: Discovering diverse ecosystem dynamics. *arXiv preprint arXiv:2505.15998*, 2025. Accepted at Alife 2025.
- [9] Eleni Nisioti*, Elías Masquil*, Gautier Hamon*, and Clément Moulin-Frier. Autotelic reinforcement learning in multi-agent environments. In *Conference on Lifelong Learning Agents*, pages 137–161. PMLR, 2023.
- [10] Erwan Plantec, Gautier Hamon, Mayalen Etcheverry, Bert Wang-Chak Chan, Pierre-Yves Oudeyer, and Clément Moulin-Frier. Flow-lenia: Emergent evolutionary dynamics in mass conservative continuous cellular automata. *Artificial Life*, 31(2):228–248, 2025.
- [11] Max Taylor-Davies, Gautier Hamon, Timothé Boulet, and Clément Moulin-Frier. Emergent kin selection of altruistic feeding via non-episodic neuroevolution. In *International Conference on the Applications of Evolutionary Computation (Part of EvoStar)*, pages 496–509. Springer, 2025. **Best paper award.**
- [12] Gautier Hamon, Mayalen Etcheverry, Bert Wang-Chak Chan, Clément Moulin-Frier, and Pierre-Yves Oudeyer. Learning sensorimotor agency in cellular automata, January 2022. (Blogpost) [Link](#).

Open-source code

All papers mentioned above are provided with code for reproducibility..

Check [personal website](#) for links.

2024 Implementation in JAX of Transformer-XL with PPO ,[Repository](#).

Clean implementation of the paper "Stabilizing Transformers for Reinforcement Learning" by Parisotto et al. in JAX. Obtaining state of the art results on several environments.

Dissemination

Moulin-Frier, Clément, Gautier Hamon, and Pierre-Yves Oudeyer. "Quand l'IA explore les prémices d'une vie artificielle." *Pour la science* 562 (2024). (Pour La Science is a French version of Scientific American)

School and personal projects

2021 MVA : GAN with several discriminators at different scales

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

- 2020 MVA : learning to act by predicting the future
- 2020 MVA RL: Reward shaping, especially with meta learning
- 2020 Télécom : Monte Carlo with neural network as importance sampler
- 2019 Personal: Implement cycle gan : photo to Monet paintings
- 2019 Télécom PAF: Transfer Learning
- 2018 Telecom PACT: Extracting emotions from songs
- 2018 Personal: Implementation of PPO on Gym-mario-bros