Mathieu Petitbois

+33 6 30 88 79 09 | mathieupetitboispt@gmail.com | LinkedIn | Website | Google Scholar

Summary

I am a final-year PhD candidate at Ubisoft La Forge and LERIA advised by Ludovic Denoyer, Sylvain Lamprier, and Rémy Portelas. My research focuses on **Deep Reinforcement Learning**, **Imitation Learning**, and **Stylized Behavior Modeling** for physics-based characters and autonomous agents in complex interactive environments. I am currently seeking **Research Scientist** and **Postdoctoral** opportunities, with a focus on **Generative Modeling**, **Large Language Models**, **Sequential Decision-Making**, and **Embodied AI**.

Work Experience

Ubisoft La Forge — Bordeaux, France
Research Assistant — *June 2023 – May 2026*

- Developed and integrated generative models (Transformers, Diffusion, VAEs, VLMs) to bridge generative modeling and sequential decision-making in complex environments (Godot, Atari, MuJoCo, Newton Physics).
- Collaborated to integrate research outcomes into game development through scientific consulting.
- Authored, published, and presented research findings at international conferences and venues.

Ubisoft La Forge — Bordeaux, France
Research Engineer — *Oct. 2022 – May 2023*

- Designed and implemented a library to extract behavioral diversity from player data, enabling the learning of diverse, controllable policies for behavior personalization.

Ubisoft La Forge — Bordeaux, France
Research Intern — *Apr. 2022 – Sep. 2022*

- Implemented and evaluated offline and online RL methods in simulated environments using MuJoCo (physics simulator) and Panda3D (game engine).
- Demonstrated that offline RL improves sample efficiency and reduces training time given sufficient data, contributing to a shift in company direction from online RL to data-driven offline RL for policy learning in games.

ENSTA Paris, U2IS — Palaiseau, France
Research Intern — *June 2021 – August 2021*

- Reimplemented the model-based approach from the World Models paper (Ha & Schmidhuber, NeurIPS 2018) in PyTorch.

Education

Ubisoft La Forge & Université d'Angers, LERIA — Bordeaux & Angers, France
PhD in Deep Reinforcement Learning for Stylized Behavior Modeling — *June 2023 – May 2026*

- **Supervision:** Ludovic Denoyer, Sylvain Lamprier, and Rémy Portelas.

Institut Polytechnique de Paris — Palaiseau, France
M.Sc. in Data Science, Highest Honors — *Sep. 2021 – Sep. 2022*

- **Main Courses:** Deep Learning, Reinforcement Learning, Computer Vision.

ENSTA Paris — Palaiseau, France
Master's Degree in Engineering — *Sep. 2019 – Sep. 2022*

- **Main Courses:** Dynamic Programming, Logic Programming, Linear Programming, Genetic Algorithms, Probability Theory, Optimization, Applied Statistics, Statistical Learning, Control Theory, Bayesian Filtering.

Technical Skills

Languages: French (Native), English (C1/C2, TOEIC: 940/990), German (B1/B2)
Programming Languages: Python, LaTeX
Libraries & Frameworks: PyTorch, JAX, NumPy, Pandas, Hydra, Transformers, vLLM, MuJoCo, Newton Physics
Tools: Git, Docker, VS Code, GitHub Copilot, Slurm

Publications

Offline Reinforcement Learning of High-Quality Behaviors Under Robust Style Alignment 2026
M. Petitbois, R. Portelas, S. Lamprier
Agents in the Wild: Safety, Security, and Beyond Workshop at ICLR 2026
Principled Design for Trustworthy AI Workshop at ICLR 2026

Offline Goal-Conditioned Reinforcement Learning with Projective Quasimetric Planning 2025
A. Kobanda, W. Radji, **M. Petitbois**, O.A. Maillard, R. Portelas
EWRL 2025

Navigation with QPHIL: Quantizing Planner for Hierarchical Implicit Q-Learning 2025
M. Petitbois*, A. Canesse*, L. Denoyer, S. Lamprier, R. Portelas
IJCNN 2025
7th Robot Learning Workshop at ICLR 2025

Offline Learning of Controllable Diverse Behaviors 2025
M. Petitbois, R. Portelas, S. Lamprier, L. Denoyer
Generative Models for Robot Learning Workshop at ICLR 2025

*Equal contribution