Amine Andam

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Research Profile

PhD candidate in Reinforcement Learning. I focus on both robust RL and adversarial attacks on RL agents. I also develop open-source libraries for RL and multi-agent RL in PyTorch and JAX.

Education

Mohammed VI Polytechnic University 2022–Present
PhD, Adversarial Reinforcement Learning *Benguerir, Morocco*

National Institute of Statistics and Applied Economics 2018–2021
Engineering Degree, Quantitative Finance *Rabat, Morocco*

Publications

[1] **A. Andam**, J. Bentahar, and M. Hedabou. "Robust Policy Optimization via Adversarial Importance Sampling." Preprint, 2026. https://arxiv.org/abs/2609.13044

[2] **A. Andam**, J. Bentahar, and M. Hedabou. "A Unified and Constrained View of Regularization-Based Robust Reinforcement Learning." Preprint, 2026. https://arxiv.org/abs/2609.13050

[3] **A. Andam**, J. Bentahar, and M. Hedabou. "Constrained Black-Box Attacks Against Cooperative Multi-Agent Reinforcement Learning." Preprint, 2025. https://arxiv.org/abs/2508.09275

[4] **A. Andam**, J. Bentahar, and M. Hedabou. "Multimodal Deep Reinforcement Learning for Visual Security of Virtual Reality Applications." *IEEE Internet of Things Journal*, vol. 11, no. 24, 2024. doi:10.1109/JIOT.2024.3450686.

[5] **A. Andam**, J. Bentahar, E. Amhoud, M. Younas, and M. Hedabou. "Decentralized Security for Multi-User VR Applications Using Multi-Agent Reinforcement Learning." *Internet of Things*, 2026. doi:10.1016/j.iot.2026.102053.

[6] G. Alwhishi, J. Bentahar, **A. Andam**, A. Elwhishi, and M. Hedabou. "Scalable and Efficient Deep Reinforcement Learning-Based Model Checker for Computation Tree Logic." *IEEE Transactions on Neural Networks and Learning Systems*, 2026. doi:10.1109/TNNLS.2026.3683573.

[7] L. El Bouga, **A. Andam**, J. Bentahar, E. Amhoud, and M. Hedabou. "Securing Vehicular Ad Hoc Networks via Digital Twin-Driven Anomaly Detection and Graph Reinforcement Learning." *IEEE Transactions on Vehicular Technology*, 2026. doi:10.1109/TVT.2026.3688587.

Open-Source Software

advrl GitHub

- A modular PyTorch library for training and evaluating robust Reinforcement Learning agents.

cleanmarl GitHub

- A PyTorch library providing clean, single-file implementations of multi-agent Reinforcement Learning algorithms, along with detailed documentation and educational resources.

marlbench GitHub

- A library that provides a unified API, common wrappers, and parallel execution for multi-agent Reinforcement Learning environments.

flaxrl GitHub

- Fast implementations of single-agent and multi-agent Reinforcement Learning algorithms using JAX and Flax NNX.

Professional Experience

Mazars March–July 2021
Data Science Intern *Casablanca, Morocco*

- Worked on Machine Learning applications in insurance.

RMA Capital July–September 2020
Data Science Intern *Casablanca, Morocco*

- Developed a Python library for algorithmic trading.