

Ariel Kwiatkowski, PhD

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Google Scholar: <https://scholar.google.com/citations?user=xkhji7MAAAAJ>

EXPERIENCE

AI Researcher (RL)

AI Redefined

Paris, France
10/2023 - Ongoing

- Designed and developed Cogment Lab, an open-source library for human-in-the-loop RL.
- Created a human-in-the-loop RL system for operating energy grids
- Developed a prototype interface that uses an LLM to convert natural language instructions into RL actions

Lead Developer (volunteer)

Farama Foundation

Remote
01/2022 - Ongoing

Open source developer, maintainer of Gymnasium (previously OpenAI Gym), contributor to other key RL software

- Made high-level design decisions for Gymnasium, notably the new vector API which improves environment speed by up to 1000x in certain cases.
- Implemented and reviewed crucial parts of new and legacy code.
- Delegated tasks to volunteers and coordinated their work.

Early Stage Researcher

École Polytechnique

Paris, France
10/2020 - 10/2023

Doctoral candidate funded by the CLIPE ITN grant

- Created a crowd simulation setup powered by reinforcement learning, including the underlying simulation and the learning code.
- Produced research papers published in peer-reviewed conferences and journals.
- Advised the development of a student's Bachelor's thesis.

Research Assistant

Bitville Oy

Helsinki, Finland
09/2019 - 07/2020

Research in association with the Probabilistic Machine Learning group at Aalto University

- Built a multi-agent reinforcement learning environment in pycolab.
- Implemented a reinforcement learning Theory of Mind module.
- This work resulted in my Master's thesis and a peer-reviewed publication.

Machine Learning Engineer

Worklytics

Remote
03/2018 - 12/2018

Freelance contract work via SharpestMinds

- Implemented an ML algorithm for employee retention prediction.
- Developed a method to interpret model predictions.
- Implemented a calibration method to estimate the certainty of a model.

Other & Internships Details available on LinkedIn.

- Visiting Researcher – TCD, Dublin, Ireland – 2023
- Visiting Researcher – KTH, Stockholm, Sweden – 2022
- Visiting Researcher – Ubisoft La Forge, Bordeaux, France – 2021
- Data Scientist I – CodiLime, Warsaw, Poland – Summer 2017
- Deep Learning Intern – SeerIT, Warsaw, Poland – Summer 2016

EDUCATION

École Polytechnique

PhD, Computer Science

2020 – 2023

Thesis: Simulating crowds with reinforcement learning

Supervisors: Marie-Paule Cani, Julien Pettré, Vicky Kalogeiton

KTH Royal Institute of Technology, Aalto University

2018 – 2020

M.Sc. Autonomous Systems, AI & Robotics

Double degree via EIT Digital

Thesis: Improving Ad-Hoc Cooperation in Multiagent Reinforcement Learning via Skill Modeling

Supervisors: Alexander Ilin, Antti Keurulainen

University of Warsaw

2015 – 2018

B.Sc. Physics, Individual Track

Thesis: High frequency airborne temperature measurements analyzed with AI techniques

Supervisor: Szymon Malinowski

SKILLS

- **Human languages:** English (fluent), Polish (native), French (intermediate)
- **Programming languages:** Python, Rust, C#, SQL
- **Libraries:** PyTorch, NumPy, Pandas, Jax, Transformers, Unity, ML-Agents, Flask, Pytest, Pytype
- **Domains:** Reinforcement Learning, Data Analysis, Machine Learning, Neural Networks, Scientific Writing, Open-Source Development, Collaboration, Natural Language Processing

SELECTED PUBLICATIONS

- Reward Function Design for Crowd Simulation via Reinforcement Learning** 2023
A. Kwiatkowski, V. Kalogeiton, J. Pettré, M-P. Cani
MIG 2023
- Understanding reinforcement learned crowds** 2022
A. Kwiatkowski, V. Kalogeiton, J. Pettré, M-P. Cani
Computers & Graphics (MIG 2022)
- A Survey on Reinforcement Learning Methods in Character Animation** 2022
A. Kwiatkowski, E. Alvarado, V. Kalogeiton, CK Liu, J. Pettré, M. van de Panne, M-P. Cani
Computer Graphics Forum (Eurographics 2022)
- UGAE: A Novel Approach to Non-exponential Discounting** 2023
A. Kwiatkowski, V. Kalogeiton, J. Pettré, M-P. Cani
arXiv (preprint)