

Ariel KWIATKOWSKI

PhD Student in Artificial Intelligence at I'X

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PROFESSIONAL EXPERIENCE

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| Jul 2020 | Research Assistant, BITVILLE, Helsinki Finland |
| Sep 2019 | Research project in association with the Probabilistic Machine Learning group at Aalto University <ul style="list-style-type: none">> Built a multi-agent reinforcement learning environment in pycolab> Implemented a distributed training procedure that involved training with old versions of the agent, to improve ad-hoc cooperation in RLlib using Tensorflow> Reimplemented the above in PyTorch, plus a Theory of Mind learning component> Implemented PPO in PyTorch from scratch, with support for multi-agent environments and recurrent policies> Contributed to the research design by finding theoretical predictions of experiment results <div style="display: flex; gap: 5px;">Python PyTorch RLlib TensorFlow pycolab PyCharm</div> |
| Dec 2018 | Machine Learning Engineer, WORKLYTICS, Remote |
| Mar 2018 | Freelance contract work via SharpestMinds <ul style="list-style-type: none">> Implemented a machine learning algorithm for employee retention prediction> Developed a way to interpret the model's predictions by indicating the most important factors> Implemented a general model calibration method to better estimate the certainty of a prediction <div style="display: flex; gap: 5px;">Python pandas scikit-learn TensorFlow GCP</div> |
| Sep 2017 | Data Scientist I, CODILIME/DEEPESENSE.AI, Warsaw, Poland |
| Jul 2017 | <ul style="list-style-type: none">> Implemented a feature extraction scheme from a research paper> Compared machine learning algorithms, and performed feature engineering and selection, on the task of classifying time series of network connections> Created a tutorial about implementing adaptive gradient optimization methods in TensorFlow <div style="display: flex; gap: 5px;">Python pandas scikit-learn TensorFlow</div> |
| Sep 2016 | Deep Learning Intern, SEERIT, Warsaw, Poland |
| Jul 2016 | <ul style="list-style-type: none">> Worked on an algorithm to detect damages in electric line insulation from drone footage> Tested various architectures for end-to-end semantic segmentation> Implemented an algorithm for aligning clusters of points <div style="display: flex; gap: 5px;">Python TensorFlow Keras</div> |

EDUCATION

- 2023** **Doctoral Student, ÉCOLE POLYTECHNIQUE, Paris, France**
- 2020** PhD program in CLIPE ITN, supervised by Marie-Paule Cani & Julien Pettré
Project name: Scenario and interaction-ready agents
Machine Learning Bayesian Statistics Reinforcement Learning Robotics Multiagent Systems Agent-Based Modelling
- Jul 2020** **M.Sc. Autonomous Systems (ICT Innovation), KTH & AALTO UNIVERSITY, Stockholm & Helsinki**
- Aug 2018** Double Degree via EIT Digital, specialization in Robotics and Artificial Intelligence
Thesis: Improving Ad-Hoc Cooperation in Multiagent Reinforcement Learning via Skill Modeling
Supervised by Alexander Ilin
Machine Learning Bayesian Statistics Reinforcement Learning Robotics Multiagent Systems Agent-Based Modelling
- Jul 2018** **B.Sc. Physics (Individual Track), UNIVERSITY OF WARSAW, Warsaw, Poland**
- Oct 2015** Individual Track is an advanced path with courses geared towards mathematical physics, covering topics such as differential geometry or category theory on top of the standard physics content.
Thesis: 'High frequency airborne temperature measurements analyzed with AI techniques'
Supervised by Szymon Malinowski
C++ Statistical Physics Real & Complex Analysis Differential Geometry Category Theory Abstract Algebra

SKILLS

- Programming languages** Python, Javascript, SQL, C++, Rust
- Frameworks** PyTorch, Tensorflow 1/2, RLib, Pandas, Flask, Node.js, ROS
- Development tools** PyCharm, Visual Studio Code, vim, git

LANGUAGES

- English ●●●●●
- Polski (Polish) ●●●●●
- Français (French) ●●○○○

TRAITS

- > Curiosity
- > Autonomy
- > Passion for science

SELECTED PROJECTS & AWARDS

- NODEBOOK, BUSINESS DEVELOPMENT LAB, KTH** 2019
github.com/redtachyon/nodebook-prototype
Developed and deployed the backend and business model for the prototype of NodeBook, a digital tool that helps teachers understand their students through graph analytics
Python Flask SQL Entrepreneurship Business Development
- HUAWEI DEEP LEARNING EXPERIENCE** 2018
[Huawei](#)
Won 3rd place in the hackathon about semi-supervised learning, qualifying for the main prize (trip to Huawei HQ in China)
Python TensorFlow scikit-learn
- ACORES** 2017-2018
[UltraFast Thermometer 2.0](#)
Worked in a research group on analyzing the temperature data from a high-speed thermometer to detect anomalies (which became the topic of my Bachelor's thesis), and developed a web app for efficient data labeling
Python JavaScript Express.js Physics Geophysics