

Piotr Januszewski

Curriculum Vitae

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[My neptune.ai blog page](#)

"Be ready. Work. Hard. Enjoy it!" ~ Chris Hadfield

Education

Studies **Computer Science**, Gdansk University of Technology.

2019–Now **Ph.D.**, under supervision of prof. Paweł Czarnul and prof. Piotr Miłoś, in collaboration with the University of Warsaw.

Thesis: *Planning and learning in Deep Reinforcement Learning*.

- Balanced **the depth and breadth of the search in large problems** through interpolation between MCTS and random shooting which solved the academy tasks in the Google Research Football environment.
- Applied **Bayesian approach to the exploration & exploitation** of Reinforcement Learning agents in the OpenAI Gym MuJoCo control suite through deep ensembles which resulted in the new state-of-the-art performance and stability results. Project advised by Marcin Andrychowicz, Google Brain.
- Developing **distributed frameworks for Deep Reinforcement Learning** via deep ensembles for faster training and efficient exploration.
- **Teaching assistant** at EEML Summer School 2020 and AI Games Hackathon 2020.
- Various presentations at the “Students for AI” meeting at the **Imperial College London** in 2019 and major AI events in Poland since 2018 — e.g. ML in PL, PyCode Warsaw, PyData 3city, beIT. Topics: Decision making in uncertainty, Bayesian NNs, Object detection on the edge devices, Machine Learning for face detection and emotion recognition, Planning in imagination...

2018–2019 **M.Sc.**, graduated with honours.

Thesis: *Planning with learned world model in Atari games*.

- **Co-Founder & Chairman of Student Research Group "Gradient"**
Managed the organization of around 10 council members. Presented 9 projects at the annual university events. Taught and mentored hundreds of students.
- **Individual Curricula** for the best students. Courses from beyond the core curricula: Internet of Things /A/, Deep Learning in Bioinformatics /A/, Big Data Platforms /A/, High-Performance Computing Systems /B+/, Advanced Methods of Exploratory Data Analysis /A/.

2014–2018 **B.Eng.**, graduated with honours.

Thesis: *Deep Learning solution for lung cancer diagnostics from 3D CT scans*.

Top 13% out of 1972 participants in the **Kaggle Data Science Bowl 2017** competition.

Experience

2019–Now **Data Science Trainer**, infoShare Academy.

Teaching practical aspects of Machine Learning in a workshop format — three classes to this moment, around 50 students. Advising students’ projects e.g.: pneumonia diagnostic from chest X-Ray with the accuracy of 90%. Conducting mock job interviews — two until now.

2018–2018 **AI Engineer Specialist**, Quantum.CX.

Trained face detector on the WIDER FACE dataset, using TensorFlow Object Detection API, intended for the emotion recognition pipeline. Achieved real-time inference on the RaspberryPI platform — around 6 FPS, backend in OpenCV/C++.

2015–2017 **Undergraduate Software Engineer**, Intel Poland.

- Development of the OpenCL user mode driver for Intel GPUs in C++. Analyzed and optimized the work scheduling component by around 10%.
- Developed performance and thermal characteristics tests under the full load for the custom Intel Deep Neural Networks training accelerator (Lake Crest) used for further chip improvements — technologies: C++ and Cython.

Publications

- **P. Januszewski**, M. Olko, M. Królikowski, J. Świątkowski, M. Andrychowicz, Ł. Kuciński, P. Miłoś, *Continuous Control With Ensemble Deep Deterministic Policy Gradients*, under review for **Conference on Neural Information Processing Systems 2021**
- K. Czechowski*, **P. Januszewski***, P. Kozakowski*, Ł. Kuciński, P. Miłoś, *Structure and Randomness in Planning and Reinforcement Learning*, **International Joint Conference on Neural Network 2021**, **equal contribution*
- J. Lewkowicz, M. Lanchytski, B. Kocot, P. Czarnul, **P. Januszewski**, *Generating Automatic Curricula for Reinforcement Learning agents*, best poster audience award at the **ML in PL 2020**
- G. Beringer, M. Jabłoński, **P. Januszewski**, A. Sobecki, J. Szymański, *Towards semantic-rich word embeddings*, **FedCSIS 2019**, pp. 273-276, doi: 10.15439/2019F120

Selected Projects

- **Spinning Up Deep RL Framework port to TensorFlow v2**
Key contributions: leading the team of 6 contributors, ports of Soft Actor-Critic and Deep Deterministic Policy Gradients. Project available on [GitHub](#).
- **World Models and AlphaZero papers implementations**
Technologies: Python, TensorFlow and PyTorch. World Models reproduce the CarRacing results. AlphaZero was trained to play Othello and Connect 4 at the superhuman level (tested empirically). GitHub: [World Models](#) and [AlphaZero](#).
- **HumbleRL - Straightforward RL Python framework**
Python framework tailored for rapid development needs of Reinforcement Learning research. Compared to other solutions in [this paper](#). Project available on [GitHub](#).

Certificates & Programs

- Mentee in the **TopMinds by Fulbright Commission 2021** program.
- AI innovator in the **Intel® Software Innovator Program**, 2018–2020.
- **Mathematics for Machine Learning Specialisation** on Coursera.
- Cambridge English: **First Certificate in English**. Level B2.