Piotr Januszewski

Curriculum Vitae

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

Education

2019–Now **Ph.D. in Computer Science**, *under supervision of prof. Paweł Czarnul and prof. Piotr Miłoś*, Gdansk University of Technology.
Thesis: *Planning and learning in Deep Reinforcement Learning.*

2018–2019 **M.Sc. in CS**, *graduated with honors*, Gdansk University of Technology.
Thesis: *Planning with learned world model in Atari games.*

2014–2018 **B.Eng. in CS**, *graduated with honors*, Gdansk University of Technology.
Thesis: *Deep Learning solution for lung cancer diagnostics from 3D CT scans.*
Scored in the first 1/5 of **Kaggle Data Science Bowl 2017** competition.

Experience

2019–Now **Ph.D. student**, *grant of prof. Piotr Miłoś*, University of Warsaw.

- Planning and learning in Deep Reinforcement Learning.
- Bayesian approach to exploration & exploitation in Deep Reinforcement Learning, advised by Marcin Andrychowicz, Google Brain.
- Development of a distributed framework for model-based RL.

2019–Now **Data Science Trainer**, infoShare Academy.
Teaching practical aspects of Machine Learning in a workshop format. Advising students' projects e.g.: pneumonia diagnostic from chest X-Ray with accuracy of 90%.

2017–2019 **Co-Founder & Chairman**, Student Research Group "Gradient" at the Gdansk University of Technology.
Managing the organization. Teaching and providing mentoring to students.

2018–2018 **AI Engineer Specialist**, Quantum.CX.
Training face detector using TensorFlow Object Detection API, part of the emotion recognition pipeline, targeting the RaspberryPI platform (backend in OpenCV/C++).

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

- Development of a OpenCL user mode driver for Intel GPUs in C++. Optimized the work groups scheduling component.
- Development of a low level deep learning library in C++ and Cython for custom Intel's DNN accelerators. Tested the chip (Lake Crest) performance and thermal characteristics under the full load.

Publications

- P. Kozakowski, P. Januszewski, K. Czechowski, Ł. Kuciński, P. Miłoś, *"Structure and randomness in planning and reinforcement learning"*, DRL and LMCA workshops at the **NeurIPS 2020**
- 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**
- P. Januszewski, *"Planning in imagination"*, presentation at the **ML in PL 2019**
- 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 include: leading the team, SAC and DDPG code improvements and benchmarks. Project available on GitHub.
- **World Models and AlphaZero papers implementations**
  Used 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). Projects available on GitHub: World Models and AlphaZero.
- **HumbleRL - Straightforward RL Python framework**
  Python framework tailored for rapid RL research needs. Compared to other solutions in this paper. Project available on GitHub.

Certificates & Programs

- Mentee in the **TopMinds by Fulbright Commission** program.
- AI innovator in the **Intel® Software Innovator Program**.
- **Mathematics for Machine Learning Specialisation** on Coursera.
- Cambridge English: First (**FCE**). Level B2.
- Individual Curricula for the best students at the Gdansk University of Technology.

Activities

- Teaching assistant during **EEML Summer School 2020** and **AI Games Hackathon 2020**.
- Various presentations at i.a. the "Students for AI" meeting at the **Imperial College London** in 2019 and major AI events in Gdańsk, Poland between 2018 and 2021. Topics: Decision making in uncertainty, Bayesian NNs, Object detection on the edge devices, Machine Learning for face detection and emotion recognition, ...
- I write for the **Neptune.ai Blog**, my page.