Piotr Piękos

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Education

KAUST, Saudi Arabia.
○ Computer Science, Ph.D. (08.2022-Now)
Working on systematic generalization in neural networks and reinforcement learning algorithms.
Supervised by Prof. Jürgen Schmidhuber

University of Warsaw, Poland.
○ Mathematics, M.Sc. (grad. 2021)
Thesis about improving mathematical reasoning in BERT
○ Mathematics, B.Sc. (grad. 2018)
Thesis: a survey of machine learning methods in Natural Language Processing
○ Computer Science, B.Sc. (grad. 2017)
Thesis: an implementation of the face recognition algorithm as an application on an android phone.

Experience

06.23-08.23   **IDSIA, Lugano, Switzerland**, *Research Internship*.
Combined with prior remote collaboration from KAUST, this resulted in 3 submissions to top peer-reviewed conferences that are currently in the blind review. The papers are about improving the transformer's computational efficiency and sample efficient Goal-Conditioned Reinforcement Learning.

01.22-06.22   **Polish Academy of Sciences, AWARElab group**, *Researcher*.
I was a collaborator in the Fast and Precise paper, a Notable Top 5% paper at ICLR 2023.
○ Implemented experiments on the Sokoban environment.
○ Investigated extendability of the algorithm to new environments, e.g. First Order Logic solvers.

10.21-01.22   **Allegro.pl**, *Research Engineer*.
Improving the quality of the neural search used in the Allegro.pl portal. Improved the speed of the data processing for the training, which allowed to increase the size of the data used for the training and, hence, improved the performance of the model.

07.17-06.20   **ITmagination**, *Machine Learning Engineer / ML Team Leader*.
Designed machine learning systems for external companies. Responsibilities:
○ Analysis of systems and suggesting new methods for utilizing the companies' data.
○ Implementing and experimenting with machine learning models.
○ Creating a serving infrastructure that allows to utilize the models in production.
Example projects:
○ Automatic patent assistant that suggests mentors and next steps based on the description of the project. The implementation was based on the BERT language model.
○ System for predicting necessary staff to operate a shop on a given day.
○ Evaluating online influencers for marketing companies with Object detection methods such as Faster-RCNN.

07.16-09.16   **Hcore**, *Python Developer Internship*.
Backend Software Engineering in Python for a network monitoring product.

Selected publications

ICLR 2023, Notable Top 5%   **Fast and Precise: Adjusting Planning Horizon with Adaptive Subgoal Search**
Arxiv link ⧉   **Project website** ⧉ .
Michał Zawalski, Michał Tyrolski, Konrad Czechowski, Tomasz Odrzygóźdź, Damian Stachura, Piotr Piękos, Yuhuai Wu, Łukasz Kuciński, Piotr Miłoś

ACL-IJCNLP 2021, **Oral**	**Measuring and Improving BERT's Mathematical Abilities by Predicting the Order of Reasoning** **Arxiv link** ⧉ **Project website** ⧉ .

Piotr Piękos, Henryk Michalewski, Mateusz Malinowski

Open-source

BERT for trax: Added BERT model and masked language modelling pipeline preparation to trax.
Github ⧉

Technical skills

Python, PyTorch, C++, Haskell, SQL, Algorithms,
Deep Learning, Reinforcement Learning,
Natural Language Processing, Google Cloud Platform
Linux, Bash, GIT, Unit tests

Languages

English	Fluent (111/120 TOEFL score)
Polish	Native

Interests

Chess, Computer Games, Psychology