

Piotr Piękos

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in Piotr Piękos • 📄 piotr.piekos

Education

KAUST

Computer Science, PhD

Supervised by Prof. Jürgen Schmidhuber

PhD

09.2022-Now

University of Warsaw

Mathematics, Master

Faculty of Mathematics, Informatics and Mechanics,

Thesis: An investigation of mathematical abilities in language models. It was accepted to ACL-IJCNLP 2021 in the form of a publication.

Supervised by Mateusz Malinowski, PhD and Henryk Michalewski, PhD.

Master's Degree

Graduation: October 2021

University of Warsaw

Mathematics, Bachelor

Faculty of Mathematics, Informatics and Mechanics,

Thesis about using residual connections in recurrent neural networks

Bachelor's Degree

Graduation: April 2018

University of Warsaw

Computer Science, Bachelor

Faculty of Mathematics, Informatics and Mechanics,

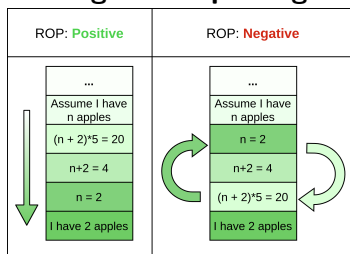
Thesis about porting OpenFace for face recognition on the phone

Bachelor's Degree

Graduation: September 2017

Selected publications

Measuring and Improving BERT's Mathematical Abilities by Predicting the Order of Reasoning (ACL, oral)



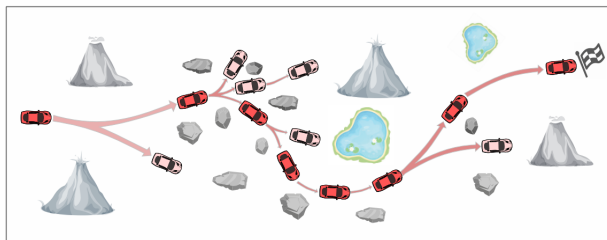
This project investigates mathematical abilities in language models and proposes training on rationales as a bridge between informal natural language and formal mathematics. Additionally proposes novel losses for better utilization of the rationales. Our model is the state of the amongst model with low inductive biases and the results are comparable with hand-crafted models.

Conferences and workshops:

- **ACL-ICJNLP 2021 (Main Conference, oral)**
- EEML 2021 (Best poster award)
- MathAI 2020 (ICLR Workshop)

[Arxiv link](#) [Project website](#)

Fast and Precise: Adjusting Planning Horizon with Adaptive Subgoal Search (ICLR, notable top 5% (oral))



Investigation of adaptive subgoal horizons in subgoal selection. We show that hierarchical approach combined with smart selection of the next subgoal can improve the performance of the model as well as generalization to longer inputs.

Conferences and workshops:

- **ICLR 2023 (Main Conference, notable top 5%, oral)**
- DeepRL 2022 (NeurIPS Workshop)

[Arxiv link](#)

Research Experience

Polish Academy of Sciences, AWARElab group

Researcher

01.2022–06.2022

Exploring methods for creating subgoals in order to solve complex reasoning tasks more efficiently than directly by predicting value or policy function.

Commercial Experience

Allegro.pl

Research engineer

10.2021– 01.2022

Improving the quality of search neural reranking model and researching related models.

ITMagination

Machine Learning developer

07.2017–06.2020

Creating machine learning models for biggest polish companies like LPP or AmRest.


Hcore

Python Developer Internship

07.2016–09.2016

Writing backend software in Python.

Open-source

BERT for trax | **trax**: Open source contribution for trax (google library for neural networks using jax) It adds BERT model and masked language modeling pipeline preparation. [Github](#) 

Languages

English: Advanced (111/120 TOEFL score)

Polish: Native

Interests

Chess, Computer Games, Psychology

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