Piotr Piękos

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Experience

ITMagination

Data Science Team Leader *01.07.2019–01.06.2020*

- Example Project: Categorizing patent ideas by natural language description. One of methods involved using sentence embeddings produced by fine-tuned BERT.
- Creating and validating machine learning model pipelines.
- Coordinating work of a small team of data scientists.
- I initialized regular machine learning seminars inside the team.

ITMagination

Data Scientist *01.07.2017–01.07.2019*

- Example Projects:
  - Object detection by transfer learning with ResNet and Inception. Trained for detection and segmentation. Model achieved over 94% f1 score. It's still used for monitoring influencers.
  - Predicting sales for a large fashion company.

Hcore

Python Developer Internship *01.07.2016–30.09.2016*

Responsibilities:

- Writing backend software in Python flask
- Integration with external APIs

Education

University of Warsaw **Master's Degree**

Mathematics, Master *October 2018 - now*

Faculty of Mathematics, Informatics and Mechanics

University of Warsaw **Bachelor's Degree**

Mathematics, Bachelor *Graduation: April 2018*

Faculty of Mathematics, Informatics and Mechanics,
Thesis about using residual connections in recurrent neural networks

University of Warsaw **Bachelor's Degree**

Computer Science, Bachelor *Graduation: July 2017*

Faculty of Mathematics, Informatics and Mechanics,
Thesis about porting OpenFace for face recognition on the phone

Skills

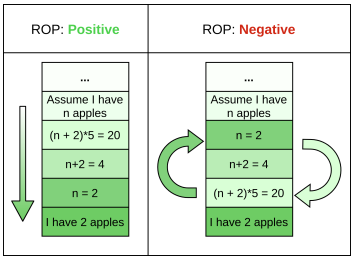
Technical: Python, TensorFlow, PyTorch, trax, pandas, scikit-learn, SQL, GIT

Conceptual: NLP SoTA, Reinforcement Learning, Probability Theory, Bayesian Statistics, Algo Graph Theory

Soft: Proactive mindset, good work ethics, friendly attitude

Publications

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



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, Selected for an oral presentation)**
- MathAI (ICLR 2020 Workshop)
- EEML 2021
- BayLearn 2020

Arxiv link

Projects

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 page

Dueling Double DQN reproduction | **TensorFlow + OpenAI gym**: Reproduction of a DQN paper with extensions (double, duelling architectures) using basic neural network libraries (tensorflow and pytorch) Github page

Machine learning based premise selection | **LightGBM, Keras, Mizar**: A model that predicts how useful premise will be for automated theorem prover. Trained on Mizar dataset based on syntactic features. Github page

Languages

English: Advanced

Polish: Native

Interests

Chess, Computer Games, Psychology