# Piotr Nawrot

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## EDUCATION

### UNIVERSITY OF EDINBURGH
PhD with CDT in NLP
2022 - 2026
- Topic: **Efficient Transformers and Grounded Language Learning**
- Supervisors: Dr. Edoardo Maria Ponti and Prof. Ivan Titov

### UNIVERSITY OF WARSAW
BS in Computer Science
2018 - 2021 | Final grade 4.5/5
- Bachelor's Thesis - **Transformers for classification and image generation**
- **Dean's List** for 2 semesters
- Top grades in Deep Learning, Machine Learning and Visual Recognition

## ACHIEVEMENTS

### OPEN SOURCE
- **nanoT5** GitHub repository (**661** ★) for efficient pre-training and fine-tuning of T5-style language models

### COMPETITIVE PROGRAMMING
- **Bronze medal in the 2019 ACM ICPC Central European Regional Contest**
- 5th place in the 2019 Polish Collegiate Programming Contest
- Top 1% in Google Code Jam 2017
- Silver and Bronze Medal in 2018 and 2017 Polish Olympiad in Informatics

## EXTRACURRICULAR

- ACL SRW 2023
  Reviewer
- ML in PL Conference 2021
  Panel discussion coordinator
- Machine Learning Society
  Organised bi-weekly AI&ML seminars
- Meet IT
  Volunteer tutor

## EXPERIENCE

### NVIDIA | Deep Learning and Algorithms Intern
May 2023 - Present | Remote, UK
- Pursuing research on improving the **efficiency of Large Language Models**

### FACEBOOK AI RESEARCH | Research Scientist Intern
May 2022 - Aug 2022 | Paris, France
- Pursued research on **unsupervised speech representation learning** with Jade Copet, Yossi Adi, Gabriel Synnaeve, and Emmanuel Dupoux

### UNIVERSITY OF WROCLAW | Research Assistant
Jan 2022 - May 2022 | Wroclaw, Poland
- Pursued research on Dynamic Pooling for Autoregressive Transformer Language Models which resulted in a **publication at ACL 2023**

### NVIDIA | Deep Learning and Algorithms Intern
Jul 2021 - Dec 2021 | Warsaw, Poland
Link: github.com/NVIDIA/DeepLearningExamples
- Implemented multi-node wav2vec 2.0 inference with two external LMs. **Observed 5% relative Word Error Rate improvement over beam decoding with n-gram while being nearly as fast as wav2vec 2.0 supervised training**
- Proposed and implemented modifications of wav2vec 2.0 Transformer that **improved valid WER from 3.26% to 2.98%**

### GOOGLE BRAIN | Research Side Project
Oct 2020 - Oct 2021 | Warsaw, Poland
Link: github.com/google/trax
- Pursued research on Hierarchical Language Models which resulted in a **publication at Findings of NAACL 2022**.
- **Contributed to Trax library**: Hourglass model, Transformer-XL relative attention, Rotary positional embeddings.

### NVIDIA | Deep Learning and Algorithms Intern
Jun 2020 - Nov 2020 | Warsaw, Poland
Link: github.com/NVIDIA/DeepLearningExamples
- Refactored research code with **multi-speaker functionality of TTS model** and contributed to open-source repository
- Researched **extracting grapheme boundaries** using outputs of ASR models

## PUBLICATIONS

J. Kaddour, O. Key, P. Nawrot, P. Minervini, and M. J. Kusner. No train no gain: Revisiting efficient training algorithms for transformer-based language models, 2023.

P. Nawrot, J. Chorowski, A. Lancucki, and E. Ponti. Efficient transformers with dynamic token pooling. *ACL 2023*.

P. Nawrot, S. Tworkowski, M. Tyrolski, L. Kaiser, Y. Wu, C. Szegedy, and H. Michalewski. Hierarchical transformers are more efficient language models. *Findings of NAACL 2022*.