

# Michał Zawalski | Curriculum Vitae

Blatona 6/91 01-494 – Warsaw – Poland

📞 (+48) 507 961 011 • ✉️ [michal.zawalski25@gmail.com](mailto:michal.zawalski25@gmail.com)

## Experience

---

- G-Research** **London**
  - *Internship in Natural Language Processing team* *June - September 2022*

I verified the performance of speech recognition models on financial audio data. I built a pipeline for evaluating and fine-tuning transformer-based models for speech recognition and audio classification.
- Google** **Zurich**
  - *Internship in Shopping Ads Image Data Quality team* *July - September 2019*

I was responsible for implementing a new enforcement aiming to filter images from shopping offers that contain promotional overlays. Prior to the implementation I've prepared an analysis of potential impact and correctness.
- Samsung** **Warsaw**
  - *Internship in Advanced Natural Language Processing group* *July - October 2017*

I was working on implementing and testing an algorithm for efficient handwriting recognition.

## Publications

---

- Fast and Precise: Adjusting Planning Horizon with Adaptive Subgoal Search**
  - *ICLR 2023, notable-top-5%* *May 2022*

In this work, we propose an improvement of subgoal search, the hierarchical planning framework. Specifically, we study the methods of adjusting the proposed subgoals to the local complexity of the environment. Our algorithm shows strong performance, even tested on out-of-distribution data.
- Off-Policy Correction For Multi-Agent Reinforcement Learning**
  - *AAMAS 2022* *May 2022*

We propose a simple yet effective algorithm for multi-agent reinforcement learning. Despite its on-policy nature, the computations can be distributed to many workers with nearly perfect speedup and a negligible impact on the quality of training.
- Subgoal Search For Complex Reasoning Tasks**
  - *NeurIPS 2021* *December 2021*

We propose an algorithm for efficient planning in complex tasks. Instead of searching the space by taking atomic actions, we propose to use high-level subgoals for a faster and deeper search. Our method shows strong results in complex reasoning environments: Sokoban, the Rubik's Cube, and INT (proving inequalities).
- On Minimal Toroidal Graphs**
  - *Bachelor of Mathematics* *December 2020*

In this work, I propose a new approach to finding the complete set of toroidal graphs, minimal with respect to edge contractions. This theorem is a base for generalizing Steinitz's theorem to toroidal polyhedra.
- Model-Free Approach To Solving The Rubik's Cube**
  - *Master of Computer Science* *September 2020*

This work aims to develop an algorithm capable of learning to solve the Rubik's Cube with minimal assumptions possible. While this makes the problem intractable for standard learning algorithms, my approach successfully solves moderately scrambled cubes.

## Competitions

---

- **Central Europe Regional Contest 2017**  
*8th place*
- **XI Microsoft Bubble Cup**  
*2nd place*
- **Google Hashcode 2017, 2020**  
*22nd place, 19th place*
- **Polish Academic Championships in Team Programming 2016, 2017**  
*12th place, 10th place*
- **LXV, LXVI Polish Mathematical Olympiad**  
*Laureate*
- **XXI, XXII Polish Olympiad in Informatics**  
*Laureate*

## Education

---

- **University of Warsaw** **Warsaw**  
*PhD in Computer Science, expected graduation June 2024* *2020–today*
- **University of Warsaw** **Warsaw**  
*Master's degree in Computer Science* *2018–2020*
- **University of Warsaw** **Warsaw**  
*Double Degree Program in Computer Science and Mathematics (BS)* *2015–2018*

## Technical skills

---

- Good knowledge of algorithms and data structures
- Advanced C++ and Python programming
- Experience in deep learning, particularly reinforcement learning
- Experience in using PyTorch, TensorFlow, NumPy, and other libraries
- Strong mathematical background
- Experience working with git
- Willingness to learn and grow better

## Programming languages

---

- C++, over 500.000 LOC
- Python, over 100.000 LOC

## Interests

---

- 3D graphics modelling
- Books by JRR Tolkien and works related
- Playing contract bridge
- Mountain hiking
- Sport, particularly football and snooker