

Michal Grudzien

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EDUCATION

- 2023-2024 **University of Oxford MA: Mathematics & Computer Science**
- Relevant Coursework:
 - Computer Vision, Theories of DL, Geometric DL, Graph Representation Learning, Stochastic Differential Equation
 - Dissertation on quantization of LLM supervised by **Professor Jakob N. Foerster and Prof. Peter Richtarik.**
- 2020-2023 **University of Oxford BSc: Mathematics & Statistics - Top 5 Ranking**
- Top Ranking: Consistently performed exceptionally well, achieving an overall **top 5 ranking** out of 42 students during the Bachelor's degree program.
 - Relevant Coursework:
 - Statistical Machine Learning, Probability Measure and Martingales, Statistical Inference, Numerical Analysis, Complex Analysis, Simulation and Statistical Programming, Graph Theory, Functional Analysis, Linear Algebra, Integration
 - Dissertation supervised by **Professor Jakob N. Foerster.**
- Palgrave Brown Scholarship (2020-2024):**
- 2020-2024
 - This highly competitive scholarship is granted by Oxford to exceptional students, with only one award available for Eastern Europe.

ACHIEVEMENTS

- 2023 **1st Author Publication at AISTATS-2023-** "Can 5th Generation Local Training Methods Support Client Sampling? Yes!" [Paper](#) / [FLOW seminar](#) / [Slides](#)
- 2023 **1st Author Paper at FL-ICML-2023-** "Improving Accelerated Federated Learning with Compression and Importance Sampling." [Paper](#)
- 2019 **National Mathematical Olympiad** - Laureate title and in top 20
- 2018 **Physics Olympiad** - Semi-finals
- 2018 **National Mathematical Olympiad** - Finalist and in top 60
- 2017 **Junior Mathematical Olympiad** - Finalist title and in top 50
- 2016 **Junior Mathematical Olympiad** - Laureate title and in top 20

EXPERIENCE

- Summer 2023 **KAUST Research Internship with Prof. Jürgen Schmidhuber**
- Investigated novel applications of NLP/LLM, including ChatGPT, for addressing Reinforcement Learning challenges.
 - Co-authored a paper submitted to AAI24 that advances credit assignment techniques in function value iteration, a fundamental component of Reinforcement Learning.
- Summer 2022 **KAUST Research Internship with Prof. Peter Richtarik**
- Developed and analysed "5GCS," a state-of-the-art method for accelerated communication with local training and client sampling support.
 - Completed Prof. Richtarik's comprehensive "SGD" course covering the latest stochastic gradient-based optimization methods in various convex settings.
- 2021-2022 **Oxford "Engineers without borders" society Project.**
- Exposure to ideas like U-net, Otsu method, and PyTorch.
- July-Sep 2021 **Volunteer Research** Supervised by Yaodong Yang
- I gained insight into Bilevel Optimization problems and research methods, marking my first exposure to research work.
- 2019 **IT FOR SHE [Volunteer] - Robotics and Programming Workshops**
- Designed workshops to combat gender inequality in STEM and promote women as computer science specialists.
 - Organised and conducted 20 hours of workshops in programming, robotics, and new technologies for underprivileged children in rural areas.

MISCELLANEOUS

- IT **Programming languages:** C++, Python, LaTeX, MATLAB, R
- Soft skills **Top soft skills:** Acting on feedback, communication, and being a fast learner.

