Michal Grudzien

Worcester College, Walton Street, Oxford, OX1 2HB, michal.grudzien@worc.ox.ac.uk, +48 666386908

EDUCATION

2020–2024 **University of Oxford, Worcester College, MA Mathematics and Statistics**

- Palgrave Brown Scholarship (2020-2024)
- First year completed with overall mark of 65.07 (equivalent to 2.1)
- Second year completed with overall mark of 69.1 (equivalent to 2.1)
  - Top 30% in: Numerical Analysis, Probability, Complex Analysis, Metric Spaces, Simulation and Statistical Programming, Graph Theory, Calculus of Variation
- Other Completed courses in Mathematics/Statistics:
  - 1st year: Analysis, Probability, Linear Algebra, Multivariable Calculus
  - 2nd year: Statistics, Linear Algebra, Integration, Differential Equations
  - 3rd year (ongoing): Functional Analysis, Probability Measure and Martingales, Statistical Inference, Statistical Machine Learning

2017-2020 **XIV LO im. Stanislawa Staszica, Warsaw, Matex,** Mathematics and Computer Science

- Courses on advanced Algorithms, Analysis, Geometry and Probability.
- Intensive mathematical, coding and algorithmic bootcamps.

ACHIEVEMENTS

2023 **1st Author Publication at AISTATS-2023- "**Can 5th Generation Local Training Methods Support Client Sampling? Yes!" Paper /FLOW seminar/ Slides

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 2022 **Research Internship at KAUST Supervised by Peter Richtarik**

- Developed and Analysed the first method (SOTA) "5GCS" that achieves accelerated communication via local training, which additionally supports Clients Sampling.
- Completed "SGD" course by Peter Richtarik, which is a comprehensive analysis of current SOTA stochastic gradient based optimization methods in strongly convex, convex and non-convex settings.

2021-2022 **Project for Oxford "Engineers without borders" society.**

In a team of 3, we were approaching classification and segmentation problems on Kaggle. We focused on Bioimages such as brain cells. Including: U-net, otsu method and programming using Pytorch.

July-Sep 2021 **Volunteer Research** Supervised by Yaodong Yang

During this time, I learned about Bilevel Optimizations problems and ways to approach them. I also gained my first insight into the work of a researcher.

2019 **IT FOR SHE** [Volunteer] **– workshops on robotics and programming for children**

I organised and delivered 20 hours of workshops in programming, robotics and new technologies for children from poor rural neighbourhoods. Additionally, the workshops were designed to fight gender inequality in STEM and present women as computer science specialists.

MISCELLANEOUS

IT **Programming languages:** C++, Python, LaTex, MATLAB, R

Soft skills **Top soft skills:** Acting on feedback, communication, and being a fast learner.