

Bartłomiej Leks

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🇵🇱 Polish | 📍 Zürich, Switzerland

MSc student in **Materials Science at ETH Zurich**, with a deep interest in **condensed matter**, **computational methods**, **quantum computing** and quantum materials. With strong experience in **data analysis** and **machine learning**, I aim to deepen our understanding of **quantum systems** and to develop new methods for exploring them, pushing both my skills and scientific progress forward.

WORK EXPERIENCE

Research Assistant, ETH Zurich

Sep 2024 — Jun 2025

- Large scale molecular dynamics software development (Python, C++)
- Graph neural networks and group equivariance implementation

Mathematics and Physics Tutor

Sep 2021 — present

- International competition and exam preparation
- Poster and presentation guidance, science popularization

Machine Learning and Web Dev Engineer, Intellectus.app

Mar 2023 — Mar 2024

- Website prototyping (Python, Vue.js)
- ML for automated performance tracking

PROJECTS

Emergent fracton behavior in two dimensions

Apr 2025 — present

- Tensor network simulations (DMRG) and analytical solutions (Bethe Ansatz)
- Topological quasiparticles in graphene as a platform for quantum memory

Computational Transition Metal Oxide band structure determination

Jan 2024 — Jul 2024

- Tight Binding and DFT solver implementation for Schrodinger-like equation
- Materials evaluation for electrochemical hydrogen production device

EDUCATION

M.Sc. Materials Science, ETH Zurich

Sep 2024 — present

Computational Methods | *Advanced Condensed Matter* | *Quantum Information Processing*

- Young Physicists Forum committee member

B.Sc. Physics (Advanced Track), University of Warsaw

Oct 2021 — Jul 2024

Strong Mathematical Background | *Quantum Mechanics and Chemistry* | *Machine Learning*

- Competitive interdisciplinary program, for 10% best students

LANGUAGES

English – C2 | Polish – C2 | German – A2

AWARDS

2024-11 – ETH Zurich MATLAB Simulathon – 1st place
2024-03 – ETH Zurich International Physicists' Tournament
2023-03 – University of Warsaw Integration Bee – 2nd place
2021-11 – University Physics Competition – Bronze Medal
2021-10 – University Scholarship for academic excellence
2021-05 – National Physics Olympiad – 13th place