

# Bartłomiej Leks

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🇵🇱 Polish | 📍 Zürich, Switzerland

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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

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### 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

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### 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

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### 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

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English – C2 | Polish – C2 | German – A2

## AWARDS

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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