Felix Pernegger

01.09.2004

felixpernegger@gmail.com — https://github.com/felixpernegger

EDUCATION

2025 – 2027 — **University of Bonn** — Master of Science in Mathematics
- Currently student research assistant
- Elected as student represantative to board of mathematical institute

2023 – 2025 — **University of Bonn** — Bachelor of Science in Mathematics
- Final grade 1.0/1.0
- Honors program at University of Bonn
- Graduated one year early
- Bachelor thesis on Lean formalization of results in Ergodic theory (grade 1.0)

2015 – 2023 — **B(R)G Ried im Innkreis** — Austrian High School Diploma (Matura)
- Pre-scientific thesis on Non-Euclidean geometry
- Graduated with distinction, achieving a final grade of 1.1/1.0

EXPERIENCE

Oct 2024 – Sep 2025 — **Tutor**, University of Bonn
- Tutor in "Algorithmic Mathematics I" and "Introduction to Geometry and Topology"
- Covering introductory topics in applied mathematics and introductory topics in (general / algebraic) topology respectively
- Held weekly exercise sessions and graded homework and exams for 1st and 4th semester students respectively

Apr 2025 – Present — **Tutor**, Bonner Matheclub
- Hold presentations about interesting mathematical topics for talented school students

Nov 2025 – Present — **Student Research Assistant**, Bonn Formalisation Group
- Contributing to Lean `mathlib` to formally verify mathematical results
- Working on a large formalisation project about convergence rates of multilinear ergodic averages

Nov 2025 – Present — **Consultant**, Project Numina
- Work on Artificial Intelligence for mathematics
- Provide blueprints and formalisations in Lean to benchmark and train A.I. agents

AWARDS

2022 — International Mathematical Olympiad (IMO): Honorable Mention

2021–2023 — Various awards at Austrian Mathematical Olympiad, including first place nationally at contests in 2022 and 2023

2023 — Advanced to the national stage of the Austrian Informatics Olympiad

PROJECTS

Euclidean Geometry Formalisation — Formalised planar Euclidean geometry from scratch in Lean, including Ceva's theorem (100 theorems list), approximately 14,000 lines of code.

Calderón Transference Principle — Formalised a version of the Calderón Transference Principle from ergodic theory and harmonic analysis as part of bachelor thesis, approximately 9,000 lines of code.

Community Database of Topology — Contributor to the community database *pi-base* in general topology, covering traits, theorems, and counterexamples