Ulysse McConnell

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Education

2025-present **ETH Zürich** (Zurich, Switzerland)
Data Science (MSc)
ESOP Scholarship

2022-2025 **ETH Zürich** (Zurich, Switzerland)
Computer Science (BSc) · GPA 5.67
Thesis: "Improving Accuracy and Performance in Raw Nanopore Signal Analysis via New Segmentation Algorithms"

2014-2022 **Albert-Einstein-Gymnasium München** (Munich, Germany)
German Abitur · GPA 1.0

Experience

2026 **University of Maryland** (College Park, Md, USA)
Summer internship in STORM lab. Development of new graph-based methods for genome assembly.
NCI Summer School on Algorithmic Cancer Biology (Bethesda, Md, USA)

2024 **INRIA/IRISA** (Rennes, France)
Summer internship in Genscale team. Programming on PIM hardware in C++ as part of biopim project (EU Horizon Grant 101047160). Development of genome language model for genomic data.

2022 **Lambert's Problem**
https://umcconnell.net/lamberts-problem/
2022 Physics Prize for High School Term Papers by the Bavarian State Universities. Laudatio (German) by Prof. Manfred Kleber (TUM).

2021 **GoodIP GmbH** (Munich, Germany)
Internship and summer job as software developer developing NLP pipelines for legal documents.

2020/21 **Seminar for Gifted Students** (online; Munich, Germany)
Ministerial Representative for High Schools in Upper Bavaria-East and the Bundeswehr University Munich

2020 **Finalist Federal AI Competition**
https://github.com/intelligenerator/aquila
Evaluation of Satellite Imagery after Natural Disasters

Jugend forscht: 2nd Place in regional competition
https://github.com/umcconnell/leaf-detective
AI tree species classification

Publications

2026 HARICOT: De Novo Assembly of Raw Nanopore Signals using Fuzzy de Bruijn Graphs
Ulysse McConnell, Quang Ngo, Can Firtina
Under review · doi:10.64898/2026.11.11.765872

Slide-level batch structure limits histology-guided supervision of transcriptomic foundation models
Ulysse McConnell, Kalin Nonchev, Viktor Kölzer, Gunnar Rätsch
ICBINB-BIO Workshop, NeurIPS 2026 (poster) · doi:10.64898/2026.09.30.755585

CRANE: Correcting Errors in Raw Nanopore Signals Using Hidden Markov Models
Simon Ambrozak, **Ulysse McConnell**, Bhargav Srinivasan, Burak Ozkan, Ernest Zhang, Can Firtina
Under review · arXiv:2603.20420

2025 RawBench: A Comprehensive Benchmarking Framework for Raw Nanopore Signal Analysis Techniques
Furkan Eris, **Ulysse McConnell**, Can Firtina, Onur Mutlu
ACM BCB '25 (16th ACM Conf. on Bioinformatics, Computational Biology, and Health Informatics), Philadelphia, USA · doi:10.1145/3765612.3767302

Technical Skills

Languages
German (fluent), English (native), French (native)

Programming Languages
Python, C/C++, Rust, Java, JavaScript, HTML, CSS

Projects
Portfolio: https://umcconnell.net/projects/
Github: https://github.com/umcconnell/