Christian Lentz

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Education

<u>Macalester College</u> | St. Paul, Minnesota | 09/2020 - 05/2024
- Double BA in Mathematics and Computer Science
- Summa Cum Laude
- Honors Thesis: Persistent Relative Homology for Topological Data Analysis
- Advisors: Lori Ziegelmeier, Susan Fox

<u>Oxford University</u> | Oxford, England, United Kingdom | 01/2023 - 06/2023
- Visiting Student at St. Catherine's College, Mathematics
- Relevant Coursework: Real Analysis, Groups and Group Actions, Number Theory

<u>University of Wisconsin</u> | Madison, Wisconsin | 06/2022 - 08/2022
- Visiting Student, Mathematics
- Relevant Coursework: Ordinary Differential Equations, Combinatorics

Experience

<u>Food Server</u> | 07/2022 - Current
Crossover Cantina and Eatery - Waterford, WI

<u>Teaching Assistant</u> | 02/2022 - 01/2023 and 09/2023 - 05/2024
Macalester College MSCS Department - St. Paul, MN
- Worked with professors and students in four courses: Linear Algebra, Introduction to Statistical Modeling, Computational Geometry, Algorithms.
- Attended lectures, graded problem sets, held office hours twice weekly.

<u>Undergraduate Research Assistant</u> | 05/2023 - 07/2023
University of Minnesota - Minneapolis, MN
- Advisors: Lori Ziegelmeier (Macalester College), Greg Henselman-Petrusek (Pacific Northwest National Laboratory)
- Research in Algebraic and Computational Topology
- In progress contribution to open-source project [Open Applied Topology](#)

<u>QA Engineering Intern</u> | 06/2022 - 01/2023
Maverick Software Consulting - Minneapolis, MN
- Contracted with TravelNet Solutions in Cottage Grove, MN

- Manual and automated software testing with two development teams: API and Finance
- Reproduction and documentation of bugs in production code
- Contributed to automated test framework; JavaScript, Playwright, CSS
- Experience with agile development / scrum teams

Talks and Presentations

A Computational Approach for Persistent Relative Homology
- 2023 Fall Meeting of the Mathematical Association of America, North Central Section, University of Minnesota-Duluth, September 2023
- Macalester College Summer Showcase, St. Paul, MN, October 2023
- AIM-AMS Special Session on Applied Topology Beyond Persistence Diagrams, 2024 Joint Mathematics Meetings, San Francisco, CA, January 2024
- PME Undergraduate Student Poster Session, 2024 Joint Mathematics Meetings, San Francisco, CA, January 2024

Persistent Relative Homology for Topological Data Analysis
- Undergraduate Honors Defense, Macalester College Department of Mathematics, Statistics and Computer Science, St. Paul, MN, April 2024

Publications

G. Henselman-Petrusek**, C. Lentz*, X. Xia*, L. Ziegelmeier* (2024). *A computational approach for persistent relative homology*. [manuscript in preparation]. Department of Mathematics, Statistics and Computer Science, Macalester College*. Pacific Northwest National Laboratory**.

Awards and Honors

Konhauser Achievement Award for Mathematics, Macalester College, 2024

Languages and Technical Skills

Proficient: Python, Java, JavaScript and Node.js, R, Rust, C
Intermediate: HTML, CSS, Mathematica, Spanish
Frameworks / SDKs: Playwright, Google Firebase