Christian Lentz

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LinkedIn

Education

Macalester College | St. Paul, Minnesota | 09/2020 - Current
- Bachelor of Arts - Mathematics And Computer Science
- GPA: 3.96
- Advisors: Lori Ziegelmeier, Susan Fox

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

University of Wisconsin | Madison, Wisconsin | 06/2022 - 08/2022
- Visiting Student in Mathematics
- Relevant Courses: Combinatorics, Techniques in Ordinary Differential Equations

Relevant Experience

Undergraduate Research Assistant | 05/2023 - 07/2023
Macalester College - St. Paul, Minnesota
- Advisors: Lori Ziegelmeier (Macalester College), Gregory Henselman-Petrusek (Oxford University, Pacific Northwest National Laboratory)
- Research in Algebraic Topology / Topological Data Analysis
- Developed an algorithm for computation of persistent relative homology using recently developed matrix factorization techniques

QA Engineer - Intern | 06/2022 - 01/2023
Maverick Software Consulting / TravelNet Solutions - St. Paul, Minnesota
- Manual and automated software testing
- Reproduction and documentation of bugs/test cases in large software projects
- Contributed to automated test framework; JavaScript, Playwright, CSS
- Use of Postman API to send API requests for manual testing
- Experience with agile development / scrum teams
- Reference: Tracy Olnhausen, Senior Direct of Quality - tolnhausen@tnsinc.com

Teaching Assistant | 02/2022 - 01/2023 and 09/2023 - 12/2023
Macalester College MSCS Department - St. Paul, MN
- Worked with professors and students to facilitate learning for undergraduate students
- Attended lectures, graded problem sets, held office hours twice weekly
- Courses: Linear Algebra, Intro to Statistical Modeling, Computational Geometry

Research and Projects

An Investigation of Algorithms for Convex Polygon Triangulation | 10/2022 - 12/2022
Macalester College Algorithms Course
- A brief exploration of popular triangulation algorithms for convex polygons
- An implementation of the ear clipping algorithm using quick hull and selection sort
- [Github Repository](#)

Macalester College MSCS Honors Research | 05/2023 - present
- Proof of correctness and stability for persistent relative homology algorithm
- Implementation in Open Applied Topology (OAT) project
- Paper in-prep currently

Mac Virtual Trade Center | 09/2023 - 12/2023
Macalester College Software Development Course
- A website built in JavaScript, CSS and HTML which allows members of the Macalester College community to buy, sell and trade used goods.
- [Github Repository](#)

Evolving Reflex Agents in Conway's Game of Life | 09/2023 - 12/2023
Macalester College Artificial Intelligence Capstone
- Investigation of cellular automaton, local search, genetic algorithms and artificial life
- [Github Repository](#)

Talks and Presentations
** denotes and upcoming event

- *An algorithmic approach for persistent relative homology using matrix factorization techniques,* **2023 Fall Meeting of the Mathematical Association of America, North Central Section,** University of Minnesota-Duluth, September 2023
- *An algorithmic approach for persistent relative homology using matrix factorization techniques,* **Macalester College Summer Showcase,** St. Paul, MN, October 2023

- ******A computational approach for persistent relative homology*, **AIM-AMS Special Session on Applied Topology Beyond Persistence Diagrams, 2024 Joint Mathematics Meetings,** San Francisco, CA, January 2024
- ******A computational approach for persistent relative homology*, **PME Undergraduate Student Poster Session, 2024 Joint Mathematics Meetings,** San Francisco, CA, January 2024

Languages

Proficient: Java, Python, JavaScript, RStudio, C
Intermediate: Mathematica, Rust, CSS, HTML, NetLogo, Spanish
Frameworks / SDKs: Playwright, Google Firebase

Resources from career exploration:
[Graduate School - Career Exploration - Macalester College](#)
[Quick Start Guides & Webinars - Career Exploration - Macalester College](#)

Notes from Liz about CV:
- Content is good, add or delete as needed
- Consider examples on the Mac website to help change around language (power verbs) and the order of information
- It may make sense to add other categories to highlight certain experiences more
- Maybe include projects on a github page?

Notes from Liz about statements:
- **Order information by past-present-future or present-past-future**
- Tie your work and experiences into what that school does and is known for. Your purpose needs to be stated in terms of what that lab does, and you need to tie it to your own experiences
- The statements are where you tailor things for each school, not in the CV

Things to include in Github page:
- Research sample
- Algs project
- Linear algebra calculator (128 project)
- AI Capstone
- Topology Research
- Math modeling capstone