ELI WILSON QUIST

Bozeman, Montana
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EDUCATION

Montana State University *January 2023 - May 2025 (anticipated)*
M.S., Computer Science

Montana State University *August 2020 - May 2024*
B.S., Applied Mathematics GPA: 3.99
Minors: Computer Science and Data Science

EXPERIENCE

Undergraduate Research Assistant, MSU CompTaG *October 2020 - Present*
Pursuing research activities in the Montana State University Computational Topology and Geometry (CompTaG) research group, under direction of Dr. Brittany Fasy.

Applied Scientist, HappyDoc *March 2024 - Present*
Building AI driven assistants for veterinarians.

Software Engineering Intern, Brightvine *November 2021 - March 2024*
Developing model-driven applications to automate the mortgage industry.

Co-Director and Tutor, AIANSSS Tutoring Program *August 2021 - Present*
Leading and participating in the volunteer tutoring program housed under the Montana State University American Indian/Alaska Native Student Success Services.

PROJECTS AND PUBLICATIONS

4. B. Holmgren, E. Quist, J. Schupbach, B. T. Fasy, and B. Rieck. *The Manifold Density Function: An Intrinsic Method for the Validation of Manifold Learning.* February 2024. preprint: arXiv:2402.09529
3. J. Cisewski-Kehe, B. T. Fasy, D. Giriyan, E. Quist. *The Weighted Euler Characteristic Transform for Image Shape Classification.* July 2023. preprint: arXiv:2307.13940
2. B. McCoy, E. Quist, A. Schenfisch. *Catching Polygons.* 2021 Fall Workshop on Computational Geometry. preprint: arXiv:2201.01286
1. E. Quist, D. Millman. *A Probabilistic Approach to GPS Art.* 2021 AMSA Research Symposium, 2021 MSU Student Research Celebration.

SUPPORTING GRANTS

† *QuBBD: Collaborative Research: Quantifying Morphologic Phenotypes in Prostate Cancer - Developing Topological Descriptors for Machine Learning Algorithms*, National Science Foundation 1664858

† *Intrinsic Validation of Manifold Learning Techniques*, Montana State University Undergraduate Scholars Program, October 2023 - May 2024

† *A Probabilistic Approach to GPS Art*, Montana State University Undergraduate Scholars Program, May 2021 - December 2021

AWARDS AND SCHOLARSHIPS

Presidential Scholar, *MSU Honors College* *August 2020 - May 2024*
Founder's Day Award for Student Excellence, *MSU Alumni Foundation* *December 2023*
Outstanding Scholar Award, *MSU Dept. Mathematical Sciences* *April 2023, April 2021*
William J. Swartz Mathem. Sciences Award, *MSU Dept. Mathem. Sciences* *May 2022*
Pi Mu Epsilon Inductee, *MSU PME* *May 2021*
John L. Magaret Mathem. Sciences Scholarship, *MSU Dept. Mathem. Sciences* *May 2021*

ACTIVITIES AND OUTREACH

Reviewer, La Matematica *March 2024*
Panel Moderator, Career Discussions Panel at MSU T4DS *April 2023*
Student Advisory Council Member, MSU Honors College *August 2021 - Present*
Exam Writer, Montana Science Olympiad, Codebusters *April 2021, April 2022*

COURSEWORK

Graduate Mathematics of Machine Learning, Mathematical Optimization, Computational Topology, Computational Geometry, Real Analysis, Linear Algebra
Undergraduate Machine Learning, Data Structures and Algorithms, Statistics, Database Systems, Numerical Linear Algebra, Numerical Analysis, Techniques in Applied Mathematics, Mathematical Biology, Software Engineering, Software in Mathematics
Seminar and Honors Analytical Techniques of Big Data, Data Science for National Security, Ethical Issues in Computer Science, Honors Seminars in Knowledge, Imagination, and Music

SKILLS

Collaboration
git/GitHub, Jira, Microsoft Office

Programming Languages
Advanced level: Python, Go, R, MATLAB, JavaScript/TypeScript. Other: C, C++, bash, SQL, Java.

Cloud, Infrastructure, and Data
Google Cloud Platform, Microsoft Azure, Docker, Kubernetes, Postgres, Hyperledger Besu, Avalanche.

Frameworks
Pytorch, TensorFlow, scikit-learn, dionysus