August Bergquist

6226 Rosemarie NE Albany, OR 97321
ajbergquist@willamette.edu
Come visit my website:
https://august-jhn.github.io/
And my github:
https://github.com/August-jhn

Current and Potential Research Interests Include: Algebra, Category Theory, Quandles and Racks, Universal Algebra, Geometric Group Theory, Algebraic Topology, Homology, Using Computers in Mathematical Exploration, Topological Data Analysis, Folkloristics, Translation

EDUCATION

2022 **B.A. in Mathematics**. Willamette University (Salem, OR).
GPA: 3.92 (currently enrolled).

RELEVANT COURSEWORK

Many of my previous mathematics assignments can be found here:
https://august-jhn.github.io/resources/classes/previous_assignments.html

PROFESSIONAL EXPERIENCE

Math REU, Kansas State University

- Worked on a team to research quandles, an algebraic structure relevant to topology, under the mentorship of Dr. David Yetter.
- Used group action on the subquandle lattice to prove theorems about subquandles
- LaTeXed a paper and beamer presentation on our research.

Mathematics Tutor, Willamette University August 17, 2021- Present

- Tutored for a variety of math classes including linear algebra, foundations of advanced mathematics, and differential, integral, and multivariable calculus
- Assisted and provided feedback for students' mathematical proofs
- Provided drop-in tutoring and walk-in math help
- Frequency of tutoring times has varied by semester; this semester it averages six hours per week

Translator, Willamette University May 3 2020- May 3, 2021

- Translated and published two academic journal articles in folkloristics from Chinese to English
- Translated and published two folk stories from Chinese to English, both under the mentorship of Dr. Juwen Zhang

Chinese Language Tutor, Willamette University August 17- December 23, 2021

- Provided homework help and conversation practice for first and second year Chinese language students.

Python Section Leader, Willamette University August 17- December 23, 2021

- Acted as a teaching assistant for Willamette University's Introduction to Programming with Python course
- Taught a weekly hour-long course to a subset of the class
- Regularly graded student assignments
- Provided individual tutoring

TALKS AND CONFERENCES

- Presented my research at NUMS 2022
- Colloquium talk about my research on quandles and racks
- Colloquium talk on the basics of homology
- Gave a talk to an AP Calculus class at Woodburn High School (my slides and activity are accessible here)
- Copresented my research at JMM 2023
- Presented on Quandles and Racks at CESMUR 2023 at Kansas State University
- Presented on Invariance of Dimension at Willamette's SSRD

AWARDS AND SCHOLARSHIPS

- NUMS conference 2nd award (https://nums.math.oregonstate.edu/)
- Python graphics contest winner
- Chester F. Luther Award in Mathematics (2022)
- Chester F. Luther Senior Award in Mathematics (2023)
- Phi Beta Kappa

PREPRINTS AND PUBLICATIONS

- K.J. Amsberry, J.A. Bergquist ,T.A. Horstkamp, M.H. Lee and D.N. Yetter, "Complementation of Subquandles" arXiv:2304.09747 (submitted to *Involve: a Journal of Mathematics*).

SKILLS

Multilingual

- Literate in English
- Literate in Chinese

Computer Knowledge

- Experience with Python
- Experience with LaTeX
- Experience with HTML, CSS, and Javascript
- Basic knowledge of Git

Referrals are available upon request.
Publications and translations are also available upon request.
Project samples are also available upon request.