0 Contact Information

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1 Research Interests

I am generally interested in theoretical computer science and the mathematics that make the study of related problems possible. In particular I am interested in algorithm design and analysis, complexity, formal languages, mathematical logic, and especially the interplay between these fields.

2 Education

- Lewis University (Romeoville, IL): Fall 2016 - Spring 2018, GPA: 4.0
  Bachelor of Science in Mathematics and Bachelor of Science in Computer Science, Spring 2018
- Joliet Junior College (Joliet, IL): Fall 2014 to Summer 2016, GPA: 3.932

3 Research Experience

- *Modeling DNA Self-Assembly Using Graph Theory* with Dr. Amanda Harsy at Lewis University: Fall 2017
  - A research project exploring the use of graph theory in modeling self-assembling structures made from DNA molecules.
  - Presented a poster with our findings at the 2018 Joint Math Meetings Undergraduate Student Poster Session in San Diego, which was selected as an *Outstanding Poster*.
  - Link to abstract/award

- *Explorations of the Stern Brocot Tree*: Spring 2017
  - This is a research paper covering uses of the Stern-Brocot tree in algorithmic number theory written as a term project for a mathematics capstone course at Lewis University.
  - Link to PDF

- STEM Undergraduate Research Experience (SURE) with Dr. Ray Klump at Lewis University: Summer 2017
  - The project specifically involved implementing two small scale clusters, one being a CPU based cluster of Raspberry Pi computers, and the other being a cluster of Jetson TK1s that made use of GPUs. The clusters were then benchmarked using code written by myself and standard code used for benchmarking such systems (e.g. LINPACK).
  - Link to code

4 Teaching/Tutoring Experience

- Mathematics Tutor at Lewis Univeristy
  - Responsible for tutoring students in courses spanning the undergraduate mathematics curriculum.
  - Responsible for administering/proctoring exam retakes.
- Lab Assistant for Lewis University Computer Science and Cybersecurity Camp: Summer 2017
  - Responsible for helping students with programming excercises and general technical setup
- Peer Tutor in Mathematics at Joliet Junior College: Fall 2015 – Fall 2016
  - Responsible for tutoring other students in courses including Calculus, Elementary Algebra, Discrete Mathematics, Linear Algebra, Physics, and Differential Equations

- Tutoring involved helping students with Pearson's MyMathLab software for their online coursework
- Co-supervised a program preparing students recently graduated from high school for the ACT Compass placement exam

- Guitar Instructor at J&B Music Studio: Summer 2011 - Present
  - Responsible for working with students one-on-one in thirty to sixty minute sessions, providing guidance and preparing lesson plans and homework tailored to the individual student.

5 Work Experience

- Receptionist at J&B Music Studio: Summer 2011 – Present
  - As a teacher, responsible for working with students one-on-one in thirty to sixty minute sessions, providing guidance and preparing lesson plans and homework tailored to the individual student
- Caregiver at Signature Agency: Winter 2016
  - Responsible for providing general care to a stroke survivor for 5 hours a week

6 Awards/Honors

- Winner of the *Outstanding Poster Award* at the 2018 Joint Mathematics Meetings Student Poster Session
- Pi Mu Epsilon
- Kappa Mu Epsilon
- Phi Theta Kappa

7 Technical Skills

- Languages
  Proficient: *Java*, *Python*, *C*, LaTeX
  Familiar: *Haskell*, *Scheme*, *Octave*
- Some experience with parallel computing, specifically using *MPI* and *CUDA*

8 Overview of Coursework

Math Courses

- MATH 170, MATH 171, MATH 172: Calculus with Analytic Geometry I, II III (Joliet Junior College)
- MATH 210: Linear Algebra (Joliet Junior College)
- MATH 220: Differential Equations and Orthogonal Functions (Joliet Junior College)
- MATH 137: Intro to Discrete Mathematics (Joliet Junior College)
- MATH 31500: Probability and Statistics I (Lewis University)
- MATH 32500: Foundations of Advanced Mathematics (Lewis University)
- MATH 36000: Real Analysis I (Lewis University)
- MATH 36100: Real Analysis II (Lewis University) *In progress*
- MATH 43000: Complex Analysis (Lewis University)
- MATH 44000: Abstract Algebra I (Lewis University)
- MATH 44100: Abstract Algebra II (Lewis University)
- MATH 48000: Senior Seminar (Lewis University)
- MATH 49900: Independent Study in Mathematics (Lewis University)
  Study and research related to the *Modeling DNA Self-Assembly Using Graph Theory* project (please see above)

Computer Science Courses

- CIS 236: Programming in C (Joliet Junior College)
- CPSC 21000: Programming Fundamentals (Lewis University)
- CPSC 24500: Object-Oriented Programming (Lewis University)
- CPSC 30000: Computer Organization/Computer Architecture (Lewis University) *In progress*
- CPSC 34000: Algorithms and Data Structures (Lewis University) *In progress*
- CPSC 35000: Operating Systems (Lewis University)
- CPSC 44000: Software Engineering (Lewis University) *In progress*
- CPSC 47000: Artificial Intelligence (Lewis University) *In progress*
- CPSC 47100: Machine Learning (Lewis University)
- CPSC 48000: Communications and Networking (Lewis University)
- CPSC 49000: Compiler Construction (Lewis University) *In progress*
- CPSC 49200: Software Systems Capstone Project (Lewis University) *In progress*
- CPSC 49600: Theory of Computation (Lewis University)

Other Courses

- PHYS 201, PHYS 202: Engineering Physics I, II with Lab (Joliet Junior College)
- PHYS 203: Engineering Physics III (Joliet Junior College)
- PHIL 104: Introduction to Logic (Joliet Junior College)

9 Activities/Interests

- Writer of Word's an' Pictures for the Jet Fuel Review blog at Lewis University
- Enjoy playing guitar, banjo, bass guitar, and double bass