Kevin Liu

630-398-2426 | khemingliu@gmail.com | linkedin.com/in/kevinhemingliu | github.com/kevinhliu7

Education

University of Illinois at Urbana-Champaign Urbana, IL

Bachelor of Science in Mathematics and Computer Science, Minor in Statistics *Aug. 2021 – May 2025*

- GPA: 3.94/4.00
- Relevant Coursework: Algorithms, Data Structures and Algorithms, Systems Programming, Database Systems, Artificial Intelligence, Numerical Analysis, Linear Programming, Nonlinear Programming, Computer Architecture, Computer Security, Statistics and Probability, Software Design Lab

Experience

Undergraduate Research Assistant May 2023 – Aug. 2023

Argonne National Laboratory *Lemont, IL*

- Conducted a comprehensive performance benchmark analysis for MPICH's SMP Broadcast algorithm on Argonne's Bebop Cluster, providing valuable insights into design efficiency
- Explored and simulated potential performance enhancements through the development of a hierarchical topology-aware algorithm for collective operations in MPI
- Communicated research findings effectively by crafting and presenting a detailed report to an audience of staff engineers within the MCS Division, fostering knowledge dissemination and facilitating informed decision-making

Research Software Engineer Jan. 2024 – May 2024

Illinois Mathematics Lab *Urbana, IL*

- Developed the front-end to an engaging web-based game named "ColorTaiko!" leveraging React.js and ReactFlow to facilitate user interaction, aimed at exploring additional counterexamples to the Kaplansky unit and zero divisor conjectures through combinatorial conditions outlined in Dr. Igor Mineyev's paper

Undergraduate Researcher Aug. 2022 – May 2023

Illinois Mathematics Lab *Urbana, IL*

- Engaged in collaborative research with a diverse team of graduate and undergraduate members, exploring the intricacies of curlicue fractals and Riemann-Weierstrass functions under the guidance of Dr. AJ Hildebrand
- Employed Mathematica to create a dynamic Wolfram Demonstration, offering a visual representation of the curlicue renormalization transformation discovered by researchers M.V. Berry and J. Goldberg
- For additional insights, please visit: demonstrations.wolfram.com/RenormalizationOfCurlicueFractals/

Course Associate/Assistant Aug. 2022 – Dec. 2023

CS124 - Introduction to Computer Science *Urbana, IL*

- Facilitated a dynamic and engaging learning environment by hosting daily online office hours, providing support and guidance to an extensive cohort of 1200+ students
- Developed comprehensive code walkthroughs, specifically focused on introductory Java programming and Object-Oriented Programming (OOP) concepts, enhancing students' understanding and proficiency in these fundamental areas
- Demonstrated leadership and commitment to academic excellence by conducting weekly quiz review sessions and diligently proctoring quizzes, ensuring a fair and conducive assessment environment
- Assumed a mentorship role, guiding and imparting knowledge to new staff members on their job responsibilities and effective teaching methodologies, contributing to the professional development of the team

Certifications

CompTIA Security+ (SY0-701) Jul. 2024 – Jul. 2027

Technical Skills

Languages: Java, Python, C, C++, SQL, JavaScript, HTML/CSS, R, Swift, Mathematica
Libraries & Tools: React.js, Node.js, Express.js, jQuery, Bootstrap, Git, Docker, Linux, PostgreSQL, MySQL, Pytorch, NumPy, Google Cloud Platform, AWS, MPI, Pandas