Ian K. Hajra

hajra.net • 69 Brown St, Box 8221 Providence, RI 02912 • (734) 730-8521 • ian_hajra@brown.edu

Motivated junior at Brown University studying Applied Mathematics and Computer Science, seeking a Software Engineering internship for Summer 2025. Skilled in C++, Rust, and systems programming, eager to contribute to impactful software projects.

EDUCATION

Brown University, *B.S. Applied Mathematics - Computer Science*   *Expected Graduation May 2026*
Relevant Courses**:** Operating Systems, Algorithmic Machine Learning, Computer Networks, Design and Analysis of Algorithms, Applied Cryptography, Computer Systems, Data Structures and Algorithms, Object-Oriented Programming, Abstract Algebra, Linear Algebra, Probabilistic Modeling, Statistical Inferencing, Partial Differential Equations, Ordinary Differential Equations, Theoretical Multivariable Calculus
Ann Arbor Pioneer High School, 3.99/4.00 GPA   *Graduated with Honors | June 2022*
AP Courses**:** Calculus BC, Computer Science A, Microeconomics, Macroeconomics, US History, Government

EXPERIENCE

Brown University Department of Computer Science, *Cryptography Teaching Assistant*   *Providence, RI | Jan 2025 – Present*
- Serve as an Undergraduate Teaching Assistant for CSCI 1515: Applied Cryptography
- Instruct and aid students in usage of CryptoPP and Microsoft SEAL libraries to create robust cryptographic systems
- Update and improve course materials and projects on 2FA Voting Systems, Private Information Retrieval, Yao's Garbled Circuits, the Signal Protocol, and other core cryptographic concepts.

InfoReady Corporation, *QA Team Member*   *Remote | Jun 2024 – Present*
- Conduct manual regression testing and new feature testing.
- Launched project to redesign the companywide architecture of Regression Testing, improving efficiency, accuracy, and scalability.
- Contributed to decisions to utilize more widespread automated testing within the organization.
- Full-time summer intern, part-time September onwards.

Brown University Department of Computer Science, *Computer Systems Teaching Assistant*   *Providence, RI | Aug 2024 – Dec 2024*
- Served as an Undergraduate Teaching Assistant for CSCI 0330: Introduction to Computer Systems
- Update and enhance course materials, including a lab focused on concurrency and a project centered on implementing malloc, free, and realloc from scratch in C
- Facilitate three office hours per week to assist students with course content and foster a supportive learning environment

Brown University Department of Egyptology, *Course Development Aid*   *Providence, RI | May 2024 – Nov 2024*
- Aid in the creation of online materials to facilitate improved learning for students in introductory Egyptology courses

Faber Piano Institute, *Administrative Assistant*   *Ann Arbor, MI | Jul 2023 – Aug 2023*
- Assisted in managing Faber Piano Adventures and Scores of Music stores
- Helped instructors transition to MyMusicStaff software system for lesson planning and scheduling
- Managed distribution of donated music scores throughout Ann Arbor

Musician, *Self Employed*   *Southeast Michigan | Mar 2019 – Aug 2023*
- Hired to perform at local and community events as a jazz pianist and organist, often as bandleader

PROJECTS

DASSH: A Disguised Approach to Secure Shell
- Developed a custom SSH system with a partner that hides key generation from users, aimed at lowering the barrier to entry for secure communication
- Implemented primarily in C++, utilizing the CryptoPP library for cryptographic functions

Virtual IP-TCP System
- Collaboratively implemented an IP-TCP networking stack from scratch with a partner in Rust, utilizing Arc, etherparse, ipnet
- Developed custom host and router programs, as well as a shared IP-TCP library
- Implemented advanced IP-TCP features including network forwarding with RIP and Mobile-IP

Personal Website - *hajra.net*
- Created a personal website using HTML, CSS, and JavaScript to showcase projects and professional achievements

SKILLS & INTERESTS

Skills: Git, JIRA, Docker, Systems Programming, Network Programming, Cryptography, Concurrency, Test-Driven Development
Coding Languages: C++, C, Rust, Python, Java, NodeJS, x86 Assembly, HTML, Bash, MATLAB
Personal Interests: Chess (1800+ Online Rating), Rock Climbing, Jazz Piano, Baking