Rijul Jain

rjainrjain.github.io rj4@williams.edu linkedin.com/in/rijul-jn github.com/rjainrjain

Education

Williams College, Williamstown, MA | 2021-2025
- Bachelor of Arts, Computer Science and English; GPA: 3.98/4.0
- Coursework: Independent Research in CS, Principles of Programming Languages, Algorithms, Computer Organization, Math/Computational Approaches to Social Justice (research), Data Structures and Adv. Prog.

Skills/Interests - PL design, text-to-visual software, parsers, compilers, C, C++, Java, R, F#, JavaScript, React, HTML/CSS, Git, Linux, systems, anything open-source, large language models & program synthesis, research.

Selected Projects (Williams College)

BitFridge (Summer 2022 - Present)
- Tool working to ensure correct POSIX system call effects across OS platforms and versions by intercepting syscalls to express and execute them in a safe, correct intermediate representation programming language

PixelPunk (Spring 2022)
- Programming language to facilitate creation of highly unique pixel art, written in F#
- Wrote parser and interpreter to produce .svg files; formalized abstract syntax of the language

Experience

Carnegie Mellon University Software and Societal Systems Department, *Research Intern* (Summer 2023)
- Researching domain-specific program generation with large language models to democratize diagram authoring using Penrose (https://penrose.cs.cmu.edu/), a text-to-diagram platform
- Working under Joshua Sunshine and Keenan Crane as part of CMU's Research Experiences for Undergraduates in Software Engineering (REUSE) program; helping Penrose blossom as an open-source project

Williams College Department of Computer Science, *Summer Research Intern* (Summer 2022)
- Partially modeled the Unix filesystem with an intermediate representation by writing a programming language in C++ using systematically tested and safe POSIX system calls (BitFridge, under Professor Daniel Barowy)
- Cataloged unexpected system call behavior by probing 100 million inputs each with fuzzers written in C

Williams College Department of Mathematics, *Research Assistant* (Fall 2021 - Spring 2022)
- Compiled dataset of 2200+ musicians by scraping 30 websites' data to analyze gender and racial diversity in US professional orchestras under Professor Chad Topaz using R and HTML/CSS knowledge

Stanford University, Center for Computer Research in Music and Acoustics, *Intern* (Summer 2020)
- Updated website code for FAUST (Functional Audio Stream) programming language using HTML/CSS

Other: Junior Software Developer for Education Without Limits, Student Volunteer for PLDI '22; Teaching Assistant for CSCI 334 & MATH 308 (Fall 2022); Staff Columnist for *The Williams Record*; fervent autodidact