Samuel Skean

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EDUCATION

University of Illinois at Chicago — Chicago, IL
B.S. + Pursuing Master's in Computer Science — *Aug. 2020 – B.S. Earned May 2024 – Left December 2025*

- **Undergraduate GPA**: *Major:* 4.0 *Overall:* 3.93 **Graduate GPA**: 3.85
- **Relevant Coursework**: Databases, Networking, Operating Systems, Systems Performance, Concurrent Computing, Compilers, Interpreters, Provably Correct Programming, Web App Development, Data Structures, Algorithms, Cloud Computing, Graphics

TECHNICAL SKILLS

Languages: Rust, C/C++, Java, C#, Dart, Swift, Go, Python, SQL (SQLite + PostgreSQL), JavaScript, HTML/CSS, F#, OCaml, Bash, AWK, x86 Assembly
Other Tools: Ansible, Wireshark, Git, JavaFX, React.js, Flutter, Axum (Rust web framework), WebGL2

EXPERIENCE

CS Research Assistant (Grad) — May 2025 – August 2025
UIC — *Chicago, IL*

- Working on Compound, a project to improve inter-process communication speed by emulating Linux kernel behavior in userspace
- Debugging quirks of signal handlers and race conditions to ensure clean termination of processes

CS Teaching Assistant (Undergrad and Grad) — January 2023 – May 2025
UIC — *Chicago, IL*

- **6** semesters of teaching experience, helping over 50 students personally
- Explained data structures in **C++**; motivated and troubleshooted **SQL**, **F#**, and **Go** programming
- Led students in debugging simple embedded projects in C++ with **Arduino** and breadboards
- Asked probing questions to help students understand principles of correct concurrent programming in **Java**
- Graded and proctored exams, homework, and labs

Student Ambassador for National Science Foundation Engineering Scholarship — August 2024, July 2025
UIC — *Chicago, IL*

- Taught a short, custom lesson on algorithmic thinking, and helped with lessons on logic gates
- Offered advice on classes, professors, and skills relevant to CS and engineering

Information Technology Support Specialist — August 2021 – December 2022
UIC Technology Solutions — *Chicago, IL*

- Demonstrated patience with older/technology-unfamiliar people and those in stressful, unfamiliar situations
- Troubleshooted new services and software packages daily, including overlapping IAM systems

PROJECTS

Path Tracer and Bezier Drawer | *Rust, pixels, winit, serde* — February 2024 – August 2024

- Rendered spheres, planes, and reflections, mostly following Raytracing in One Weekend by Peter Shirley et al.
- Added lights and a real-time graphical preview of the render
- Gained an *8x* speedup by parallelizing the code across multiple cores
- Also wrote a similar tool to draw bezier curves and splines, with a simple GUI

MMap and Other Extensions for XV6 | *C* — September 2024

- Enabled user programs to treat inode files as though they were part of memory for flexible random access
- User can choose to load each page lazily for minimum memory usage - or all-at-once for predictable performance
- Also implemented color terminal and graphical display drivers, saving and restoring state for a clean interface

Tracing Garbage Collector | *C*   December 2022

- Implemented a mark-and-sweep garbage collector in C
- Allocated memory using sbrk(), maintaining an intrusive free list
- Manipulated pointers to find all allocated, unused memory on the heap and free it without the user calling free

15-Puzzle Graphical Game | *Java, JavaFX*   November 2021

- Developed a GUI application to let the player solve a 15-puzzle, a puzzle where numbers must be arranged in a certain way in a grid
- Used A* search and worker threads to solve the puzzle in the background if the player asks, visualizing solution step-by-step