Ammar Ratnani

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github.com/ammrat13

Education

Georgia Institute of Technology, Atlanta, GA — Aug. 2019 - May 2023 (Expected)

- Bachelor of Science in Computer Science
- *Concentrations:* Systems & Architecture and Theory
- *GPA:* 4.0 / 4.0

Skills

Proficient:	C, Linux, Java
Intermediate:	C++, Go, Python, HTML, JavaScript, Git
Beginner:	NumPy, PyBullet, Typescript, Angular, SQL, LaTeX
Coursework:	Intro. Computer Architecture, Data Structures, Honors Linear Algebra

Experience

Teaching Assistant | Intro. Computer Architecture — Aug. 2020 - Present

- Instructed students in this challenging major-specific course
- Handled both one-on-one office hours and group recitations
- Created instructional material for recitations, as well as student assignments: homeworks, quizzes, and the final exam
- Wrote automated tools using Puppeteer and PyLC3 to assist with manual grading in homeworks and projects
- Attained a deeper understanding of how computer systems work

Software Development Intern | Fraudmarc — May 2020 - Jul. 2020

- Used Test-Driven Development to work heavily on maturing the codebase
- Cut backend test boilerplate by a factor of twelve and reduced average Cypress runtimes three-fold
- Introduced frontend visual testing with Percy to flag uncaught regressions with little to no overhead and few false positives
- Performed general Angular, PostgreSQL, and AWS maintenance
- Gained familiarity in email protocols by reading IETF RFCs

Institute of Electrical and Electronics Engineers | Simulation Team Member — Aug. 2019 - Dec. 2019

- Worked to create Georgia Tech's submission to Southeastcon 2020: a small robot that moves to collect blocks then stacks as many as it can in a particular order
- Collaborated with subteam members to test the design and guidance of the robot
- Integrated custom electronics code in Python with PyBullet to ensure fidelity when simulating rigid- and soft-body interactions

Projects

Gameboy Advance Cross-Compilation — Apr. 2020 - May 2020

- Compiled a GCC-based toolchain to target the GBA with C and some C++
- Tested by cross-compiling my own game from Georgia Tech's CS 2110
- Became familiar with program initialization on bare-metal targets and used that knowledge to write a C runtime from scratch

Honors and Awards

Third Place in NYU's CSAW CTF — Nov. 2020

- Performed well in the qualifying round and was accepted to the Mad H@tters' team
- Swept the cryptography challenges in the final round, placing us third overall