ETHAN YUN

ethanyun@utexas.edu | linkedin.com/in/moogloof | github.com/moogloof | Austin, TX | (408) 603-0924

EDUCATION

The University of Texas at Austin, Austin, TX — May 2027
Bachelor of Science in Computer Science - **Turing Scholar**
GPA: 4.0
Relevant Coursework: Data Structures and Algorithms, Discrete Mathematics

Stanford Online High School, Stanford, CA — June 2024
High School GPA: 3.98
Relevant Coursework: Data Structures and Algorithms, Advanced Topics in CS: Computer Systems, Quantum Computing, Modern Physics, Linear Algebra, Number Theory

TECHNICAL SKILLS

- **Languages:** Assembly (x86 and ARM), C, C++, Java, Python, HTML/CSS, Javascript, SQL
- **Toolkits:** CMake, Flask, Django, Arduino, Raspberry Pi, MSP432, MongoDB, PostgreSQL, Git, GitHub, QEMU, Bochs, Quantum Computing, Qiskit, TensorFlow, scikit-learn, numpy, scipy, Makefile

EXPERIENCE

FIRST Robotics Team 5206, Software Lead — August 2022 – June 2024

- Developed computer vision models, like YOLOv7 and CenterNet, for object detection and robot navigation correction
- Programmed and tuned a PID motor control algorithm to automate omni-directional movement and path correction
- Managed team's repositories, created sub teams for different components of the robot codebase, and lead workshops throughout the season for onboarding new members

PROJECTS

loofOS

- Wrote an x86 operating system and BIOS bootloader from scratch in C and Assembly
- Programmed pre-emptive interrupt handling, round-robin task switching, user processes, and virtual memory
- Created device drivers for VGA/VESA video displays, timers, and filesystems like exFAT and ISO9660
- **Stack**: C, Assembly, x86, QEMU, Bochs

y86-emul/asm

- Programmed an emulator for the y86 specification that supports CPU pipelining and live debugging through console outputs
- Created an assembler that can generate all possible valid y86 binaries given some assembly code
- **Stack**: C, Java

qsim

- Developed a simulation of the evolution of a continuous quantum state according to the Schrödinger equation
- Demonstrated the splitting state evolution of a single particle in a Paul ion trap
- **Stack**: Python, Quantum Computing

moogloof.com

- Created a personal blog/portfolio written using Flask and Python
- Made a portable and secure backend with encryption, form validation, and user logons
- Managed a non-relational database in MongoDB
- **Stack**: Python, Flask, MongoDB, Database, Javascript