

EDUCATION & COURSEWORK

The University of Texas at Austin:

GPA: 3.97/4.00

B.S. in Computer Science, Turing Scholar Honors, B.S. in Economics

Expected B.S.: 2024

- CS 331H Honors Algorithms/Complexity
- CS 429H Honors Computer Architecture
- CS 439H Honors Operating Systems
- CS 343H Honors Artificial Intelligence
- CS 354R Game Technology
- CS 378H Honors Data Mining
- CS 378H Honors Computer Graphics
- CS 174S Longhorn Startup Seminar
- CS 370 Type Theory
- ECO 420K Microeconomic Theory
- ECO 320L Macroeconomic Theory
- ECO 354K Game Theory

WORK & PROFESSIONAL EXPERIENCE

- **Cornerstone Coding** Austin, Texas
Founder and Competitive Programming Coach *May 2020 - Present*
 - Working in one-on-one and group settings with 30+ secondary students, undergraduates, and industry professionals on algorithmic programming, competitive programming, and technical interviews in C++, Java, and Python.
 - Adaptably building problem-solving intuition through advanced algorithms, data structures and techniques such as dynamic programming, graph theory, sliding windows, range query trees, and complexity analysis.
- **AlphaStar Academy** Santa Clara, California
USA Computing Olympiad Gold/Silver Instructor *July 2017 - August 2021*
 - Lecturing on topics including floodfill, greedy methods, depth first search, breadth first search, binary search trees, hashing, graph algorithms, and dynamic programming.
 - Built multiple JavaScript-based grading automation tools for internal use.
- **United Imaging Intelligence America** Cambridge, Massachusetts
Software Engineering Intern *June 2019 - August 2019*
 - Investigated and fixed Optical Character Recognition failures for Python and C# production medical software.
 - Improved the accuracy of data transfer systems and automated hospital field data cleanup.

RESEARCH

- **SmartPulse, UToPiA Programming Languages Research Group:** Worked on supporting and expanding the scope of the SmartPulse project. This project utilizes linear temporal logic (LTL) to automate the checking of blockchain smart contracts. Increased language support with improved translation and instrumentation.

PROJECTS

- **VLIW Architecture Implementation:** Implemented a Very Long Instruction Word (VLIW) Architecture, including a preprocessor and compared to a pipelined processor benchmark.
- **Multilayered Neural Network:** Built a variable-layer, feed-forward neural network in Java using backpropagation.
- **Malloc Implementation:** Implemented the malloc and free functions in C using a circular linked list of free memory.
- **Preemption, Threading:** Implemented preemption and used semaphores to build blocking locks, bounded buffers, barriers, futures, and reusable barriers in C++.
- **Virtual Memory:** Formatted memory to enable virtual memory and handled page faults in C++.
- **HarkerDev:** Led my school's official student-led software development organization. Primarily worked on the Bell Schedule, Summer Reading, Volunteering, Announcements, and Eagle Buddies projects using JavaScript, TypeScript, Handlebars, SQL, Python, and Java.

TECHNICAL SKILLS

- **Proficient In:** C++, Java, Python, JavaScript
- **Experience In:** C, C#, Swift, SQL, Handlebars, MIPS Assembly, Lisp

HONORS/AWARDS

- Leadership Award:** Recognized by The Harker School teachers as a community leader [2020]
- 3rd Place, Stanford ProCo:** Stanford Programming Contest Advanced Division [2019]
- Platinum Level Contestant:** USA Computing Olympiad [2016-2020]
- Two-Time American Invitational Mathematics Examination (AIME) Qualifier** [2019/2020]
- CS50 Endowed Turing and SF Bay Area Texas Exes Scholarships:** Merit-based college scholarships [2020]
- Caroline D. Bradley Scholar:** Full merit-based high-school scholarship [2016-2020]

ORGANIZATIONS

- Core Problem Writer:** UT Programming Contest [2021-Present]
- Co-President:** Harker Gender-Sexuality Alliance [2019-2020]
- Vice President:** Harker Programming Club [2019-2020]
- Administrator and Lead Developer:** HarkerDev [2018-2020]