Ashley Feng

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EDUCATION

University of Texas at Austin   Austin, TX
BS in Computer Science, Turing Scholars Honors Program   *August 2024 - May 2027*
GPA: 3.9/4.0 **Coursework**: Honors: Computer Architecture, Data Structures, Discrete Math | Linear Algebra, Probability

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, SQLite, x86-64, AArch64, HTML/CSS
Frameworks: React, Flask, Django, Catch2, JUnit, Web Assembly

EXPERIENCE

Undergraduate Research Assistant   Apr 2025 – present
UT Data Systems Lab   *Austin, TX*
- Current focus in designing & optimizing range-filtered ANN search algorithms using graph-based indexing and subgraph composition
- Evaluated performance on standard benchmarks (SIFT1M, GIST1M) using Recall@10 and query throughput (QPS) under varying search queue lengths
- [Spring 2025] Worked on memory management protocols for distributed databases using C++ with a focus on embedded synchronization and concurrency control

Teaching Assistant   Aug 2023 – May 2024
Liberal Arts & Science Academy   *Austin, TX*
- Assisted computer science department of 300+ students across 3 courses and programming languages of Java, Python, Verilog, and ARM Assembly
- Graded student labs and organized after school drop-in tutoring

PROJECTS

SkinSage | *Python, SQLite, Selenium, NumPy, MatPlotLib, Flask*   June 2024
- Mapped 2000+ cosmetic listings webscraped from OliveYoung based on chemical similarities to develop content-based recommender system
- Modeled ingredient lists using word embedding and one-hot encoding to visualize products as 2D vectors using t-SNE dimensional reduction
- Built full-stack web application displaying all product information and computing real-time cosmetic recommendations with cosine similarity

Gameboy Emulator | *C++, OpenGL, SDL*   Apr 2025
- Implemented fully functional emulator of the Gameboy Original, including CPU with ISA of 500+ instructions, liquid crystal display, pixel processing unit, and memory management unit
- Displayed cycle-accurate graphical output and supported joypad interrupts using OpenGL and SDL libraries
- Supported all memory bank controllers and manual bank switching to emulate all licensed Gameboy ROMs

Tsoogle | *Java, Attoparser*   Nov 2024
- Indexed content of over 10,000 web pages using a web crawler extended from attoparser
- Designed full-stack web server displaying relevant page results by tokenizing and converting client-side queries supporting advanced search syntax to parse trees
- Verified reliability by implementing JUnit tests on randomly generated local web directories

INVOLVEMENT

Awards: CyberPatriot Open Division Platinum Semifinalist for Cisco Networking, Groce Family Turing Scholarship in Computer Science
Organizations: Distributed Systems Reading Group, Turing Scholars Student Association, Women in Computer Science