

Xiangwei (David) Chen

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EDUCATION

• University of Texas at Austin

Austin, TX

Pursuing BS in Computer Science (Turing Scholars Program); GPA: 3.72

Aug. 2017 – May 2021

Coursework: Data Structures and Algorithms (H), Discrete Math (H), Computer Architecture (H), Operating Systems (H), Algorithms, Quantum Information Science (H), Multivariable/Vector Calculus (H), Statistics/Probability, Linear Algebra, Autonomous Robotics I/II, Competitive Programming, Artificial Intelligence (H), Differential Equations

EXPERIENCE

• UT Austin Robotics Department

Austin, TX

Undergraduate Researcher

Jan. 2018 - Present

- **Toyota Research Institute Challenge:** Competed against MIT, Stanford, and other top schools in Toyota's Robotics challenge involving LEGO Blocks and other household objects
- **Robot Says Hello:** Autonomously had UT's Building Wide Intelligence Robots wander around and collect data on what students want robots to do
- **Robot Operating System (ROS):** Used a mixture of C++ and Python integrated with ROS to write code for robotics projects as a researcher

PROJECTS

• Web Crawler and Search Engine

Nov. 2017 - Dec. 2017

- Implemented a web crawler and search engine in Java
- Developed an web index using an inverted index, storing data from each unique URL
- Enabled query processing utilizing Dijkstra's shunting yard algorithm, allowing for logical operations and precedence

• Tetris

Oct. 2017

- Implemented the classic game of Tetris in Java
- Version of Tetris included basic and complex mechanics such as rotations and wall kicks
- Wrote a genetic algorithm that finds an optimal scoring pattern to play the game
- Developed a testing framework using unit tests and integration tests

• Computer Architecture Projects

Jan. 2018 - May 2018

- Built channels to enable concurrent execution and send data between functions, storing the state of the stack pointer to enable functions to pause execution
- Constructed an interpreter for a simple language with global variables, conditional statements, loops, functions, lambda functions
- Rewrote interpreter to compile the language into x86 assembly
- Developed a single-cycle, multi-cycle, and pipelined processor in Verilog

• Operating System Projects

Aug. 2018 - Dec. 2018

- Implemented malloc and free in a dynamically-allocated heap
- Developed pre-emptive and cooperative multi-threading
- Wrote code enabling virtual memory for an operating system
- Enabled thread lambdas and multi-threading using process/thread control blocks

SKILLS

• **Proficient:** Java, C/C++, Git, Linux

• **Familiar:** Go, Rust, Python, x86/64 Assembly, Verilog, HTML/CSS, Javascript, Clingo

EXTRACURRICULAR ACTIVITIES

• **Competitive Programming:** Participation in the competitive programming contests

• **Clubs:** Association of Computing Machinery, Machine Learning and Data Science, Turing Scholars Student Association, Robocup@Home

• **Hackathons:** HackTX 2018