

# Xiangwei (David) Chen

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## EDUCATION

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### • 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 (H), Discrete Math (H), Computer Architecture (H), Operating Systems (H), Quantum Information Science (H), Multivariable/Vector Calculus (H), Statistics/Probability, Linear Algebra, Autonomous Robotics I/II, Competitive Programming

## PROJECTS

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### • 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
- Wrote the interpreter in C, Rust, and Go
- Rewrote interpreter to compile the language into x86 assembly
- Developed a single-cycle, multi-cycle, and pipelined processor in Verilog

### • Random Writer

Oct. 2017

- Utilized Markov Chains to read and generate a new text similar to a known piece of work

### • Treaps

Nov. 2017

- Implemented a treap in Java, having aspects of both a binary search tree and a heap
- Developed unit tests to ensure correctness of implementation

## SKILLS

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• **Proficient:** Java, C/C++, Git

• **Familiar:** Go, Rust, Python, x86/64 Assembly, Verilog

## EXTRACURRICULAR ACTIVITIES

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

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