

# Xiangwei (David) Chen

<http://www.chinatiger99.github.io>

Email : [xchen99@cs.utexas.edu](mailto:xchen99@cs.utexas.edu)

Mobile : 713-409-0700

## 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 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

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### • Toyota Connected

Dallas, TX

*Software Engineering Intern*

*May 2019 - Aug. 2019*

- Developed and improved the back-end that used Elixir and GraphQL for an internal tool that simulated road trips
- Worked with the Phoenix Framework to improve the front-end and UI/UX experience for users of the internal tool
- Migrated internal tools from using Apache Kafka to AWS Kinesis

### • 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

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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, including rotations and wallkicks
- Wrote a genetic algorithm that finds an optimal scoring pattern to play the game and developed a testing framework using unit tests and integration tests

### • Operating System Projects

Aug. 2018 - Dec. 2018

- Developed a single-cycle, multi-cycle, and pipelined processor in Verilog
- 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

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

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

## EXTRACURRICULAR ACTIVITIES

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- **Competitive Programming:** Participated in the competitive programming contests held biweekly
- **Information and Systems Security Society:** Participated in the capture the flags (CTFs) held biweekly
- **Clubs:** Association of Computing Machinery, Machine Learning and Data Science, Turing Scholars Student Association, Robocup@Home
- **Hackathons:** HackTX 2018