

Andrew Tsui

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Portfolio: <https://andrewtsui.github.io>

GitHub: <https://github.com/andrewtsui>

Education

University of California, Irvine – Irvine, CA

September 2017 - June 2021

Anticipated B.S. in Computer Science and Minor in Statistics

Major GPA: 3.75/4.0

Relevant Coursework: Artificial Intelligence, Data Management, Data Structures Implementation & Analysis, Design & Analysis of Algorithms, Information Retrieval, Machine Learning, Principles in System Design

Experience

Thousand Oaks Chinese School (Nonprofit) – *Volunteer Software Consultant*

July 2020 - Present

- Migrated existing registration website functions from **Ruby on Rails** to **React** and **Express.js**.
- Implemented a directory search engine to handle the information of 7,000+ people with an average query response time under 200ms.
- Added extra functionality for teachers to integrate previously manual tasks into the website and **PostgreSQL** database.

LogicMonitor – *Software Engineer Intern*

June 2019 - Aug 2019

- Designed a microservice to deliver product and feature information to 1,000+ companies worldwide.
- Improved the data model to be more efficient by applying the **relational database model**.
- Implemented a **RESTful API** from the ground up to make HTTP requests to the **MySQL** database within milliseconds.

Innovart Design Inc. – *Unpaid Software Intern*

July 2018 - Sept 2018

- Customized an interactive website for their new product, CarWink.
- Collaborated with employer to develop user interface strategies to increase web traffic by 35%.
- Revitalized the page dynamics with **Bootstrap** and **responsive web design**.

Private Tutor

Sept 2017 - Present

- Tutored 7 college students in computer science at a given time and K-12 students in algebra, geometry, and trigonometry.
- Create a tailored lesson plan to accommodate each student's specific learning style.
- Consolidate concepts to help students make new connections between unfamiliar topics.

Projects

Web Search Engine and Crawler Project (Python)

Mar 2020

- Developed a crawler that scraped 50,000+ webpages to gather URLs and tokenize textual information.
- Simhash algorithm reduced pages crawled by 30% and **multithreading** reduced crawl time by 75%.
- Implemented a web search engine from the ground up that is capable of handling 50,000+ webpages under **harsh operational constraints** with a query response time under 300ms.

Checkers AI Project (Python)

Sept 2019

- Developed an AI that placed in the top 30% when matched against the rest of the class.
- Implemented a heuristic search function using minimax algorithm to find the best potential move.
- Added alpha beta pruning to allow for deeper searches without exceeding long run times.
- Constructed an effective evaluation function that assigns weighted scores to each board configuration.

Technical Skills

Programming Languages: Java, Python, C, C++, HTML, CSS, JavaScript, R

Database: MySQL, PostgreSQL, MongoDB

Tools/Frameworks: React, Node.js, Express, BeautifulSoup, Git, Docker

Languages: Fluent in English, Working proficient in Mandarin