

Andrew Chang

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EDUCATION

University of California, Irvine

Irvine, CA

Bachelor's of Science in Computer Science, Minor in Statistics

September 2020 – June 2024

- Relevant Coursework: Data Structures, Algorithms, Databases, Web Applications, Computer Architecture, Computer Networks, Operating Systems, Software Design Principles, Statistical Methods for Data Analysis

EXPERIENCE

UC Irvine - Research Assistant | Irvine, CA

June 2023 – Present

- Assisting Prof. Chen Li in exploration of scalable computations and cloud-based services for Texera, a browser-based program for collaborative data analytics using a GUI to form workflows without writing code
- Improved SQL queries in the Postgres database with PySpark for the underlying "aggregate" and "sentiment-analysis" abstracted functions by speeds of up to 30%

WhizKids Computer Center - Course Instructor | San Jose, CA

January 2022 – November 2022

- Lectured classes of 3-5 students in topics including Python, Java, front-end web development, PyGame, data structures and algorithms, and machine learning
- Furthered student interest in computer science through personally developed lectures with projects such as weather forecasting, quiz/studying, and type racing based web-apps ensuing a 90% returning student rate

UC Irvine ICS - Course Staff | Irvine, CA

December 2021 – Present

- Arranged exercises on Github and graded weekly homework assignments for UC Irvine's ICS 46: Data Structure Implementation and Analysis & ICS 32A: Python Programming and Libraries (Accelerated)
- Provided open lab hours three times weekly to help debug course projects and implement data structure concepts such as stacks, queues, AVL trees, and heaps resulting in a 95% positive anonymous student-tutor feedback

PROJECTS

Mock Social Media Platform | React, Express, Node.js, MongoDB

- Designed dynamic user profiles and picture post schemas stored in MongoDB with user interaction on the web using React/Redux and created RESTful API endpoints using Express to handle CRUD operations
- Implemented token-based authentication using JSON Web Tokens (JWT) upon successful user logins and user requests with the server

UCI Search Engine | Python, flask, HTML/CSS

- Restructured an inverted index algorithm to effectively store 30,000+ documents locally and incorporated a TF-IDF/cosine similarity algorithm to efficiently retrieve information with a query response time less than 150ms
- Increased the rate of web-crawling the UCI directories by over 150% via cache server by implementing multithreaded web-crawlers and scraped web pages using nltk and BeautifulSoup

Minesweeper Solver | Python

- Utilized heuristic algorithms and the Monte Carlo method to deduce the best possible solution for a board, resulting in 85%, 80%, and 34% solve rates for beginner, intermediate, and expert boards respectively

Animated Portfolio Website | Node.js, HTML/CSS, Blender, three.js

- Developed an interactive and responsive personal website hosted on Veracel that showcases an animated 3-D room created with Blender and scroll transitions using three.js

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL (Postgres), JavaScript, HTML/CSS,

Frameworks: Node.js, Flask, Django, jQuery, Bootstrap, Express.js, PyUnit, Mocha, JUnit

Developer Tools: Git, Docker, Postman, Bash, pgAdmin4, Google Firebase, MongoDB Compass

Libraries: React, NumPy, Matplotlib, Pandas, Scikit-Learn, PySpark