MENGYU "JACK" ZHANG

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WORK EXPERIENCES

Data Scientist/ Software Developer	**Children's Hospital Los Angeles, Levitt Lab** ↗	**Since Jan 2021 (part-time before Aug 2022)**

Machine Learning research and software development with a focus on EEG data and signal processing under Dr. Pat Levitt. My main focus was to analyze and eliminate unwanted noise from infant EEG data: I developed machine learning based pipelines that remove noise from EEG data through various means like Signal Processing (blind source separation), Computer Vision (movement analysis), etc.

`Signal Processing / Computer Vision / Python / TensorFlow / EEG / MatLab`

Software Developer Intern	**Royal Bank of Canada, Amplify** ↗	**Summer 2021**

As a full-stack developer, worked on a team of 4 and built the first end-to-end YAML-configured monitoring deployment tool at RBC SRE to help increase its operational efficiency. It automates tasks like Prometheus onboarding using Consul and deploying Grafana dashboard templates for tools like MongoDB using Jsonnet with an 86% stack coverage. My key contributions: config generator, deployer, and UI components.

`Python / JavaScript / Flask / React / Kubernetes / IaC / Jsonnet / Docusaurus`

Teaching Assistant	**University of Southern California, CS@SC** ↗	**Jun 2020 - May 2021**

Taught introductory and intermediate level Python, Java, and Web development to students of different levels from middle/high school. Created unit tests for student assignments, wrote quizzes and review questions for the students.

`Java / JavaScript / Python`

EDUCATION

2019 – 2022	**University of Southern California**	**B.S. - Computer Science**

GPA: 3.86/4.0

Software Development, Discrete Math, Advanced Data Structures & Algorithms, Probability Theory, Machine Learning, Artificial Intelligence, Computer and Network Security , Operating Systems & Networking, Machine Learning, Linear Algebra , Data Structures & Algorithms, Calculus, Computer Architecture, Computer Organization

PROJECTS

Personal Project Full Stack	**Shopper** ↗	**Since Oct 2023**

Purpose: one-stop solution for comparing grocery prices across different places.
Built a web app that compares grocery prices from different stores and retailers. Supports unit price conversion and comparison. Features reactive front end built with Svelte.

`Svelte / JavaScript / Go / SQLite / Cloudflare Workers`

Personal Project Android & Back end	**"KnocKnock"** ↗	**Since Oct 2018**

Purpose: solve the problems I had with video calling people in noisy or inconvenient situations.
Built a WebRTC based video conferencing app with features like real-time captioning, language identification, noise-canceling, and manual camera controls. Utilized Machine Learning for multiple audio/image processing steps.

`Android / Kotlin / Java / WebRTC / Python / Firebase / PHP / C++`

Project Lead Full Stack	**GreatFinds** ↗	**Sep 2020 to Nov 2020**

Software Development class final project, a platform that allows users to share all kinds of media content. Utilized the Java EE stack to develop server-client platform. Built the project structure with core components like JPA (database) and JSF. Led and coordinated efforts among all group members.

`Java EE / JSF / JPA / MySQL / JavaScript`

Personal Project Cross Platform	**Decide for Me** ↗	**Aug 2022 - Oct 2023**

Purpose: let the computer decide on places like restaurants for me to avoid making hard decisions.
Built a cross-platform Flutter app that can pick places for the user randomly, weighed by ratings, using Yelp's Fusion API. Supports filters based on location, distance, price, rating, hours, and more.

`Flutter / Dart / JavaScript / Riverpod / Android`

For more on my projects, visit jackzhang.me/projects ↗.

SKILLS (IN APPROXIMATE PROFIENCY ORDER, MOST TO LEAST)

Languages: Python, JavaScript, Java, C/C++, Kotlin, Go, SQL, PHP, Bash, MATLAB.

Frameworks/Tools: Android, Node.js, React, Svelte, Flutter, Flask, TensorFlow, Firebase, Java EE, MySQL, GCP, WebRTC, CI.

ACTIVITIES/HOBBIES

Machine Learning
ACM
Hackathons (e.g. HackSC, HackMerced)
Answering on Stack Overflow :)
CTFs (e.g. picoCTF: 400/16000)

MORE

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