Alex Fang

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EDUCATION

Carnegie Mellon University | *Masters of Intelligent Information Systems. GPA: 4.0/4.0* December 2025 | Pittsburgh, PA
University of California, Los Angeles | *Bachelor of Science in Computer Science. GPA: 3.8/4.0*

- **Coursework:** Neural Networks and Deep Learning, NLP, Machine Learning, Systems and Signals, Linear Algebra, Discrete Math, Probability and Statistics.
- **Activities:** Tau Beta Pi, Wong Research Lab, Association of Computing Machinery.

PROJECTS & EXPERIENCE

Factuality and Fairness in LLMs | *Machine Learning Engineer* January - March 2024 | Los Angeles, CA

- Investigated three open-source models (Microsoft's Phi-2, Mistral AI's Mistral-7B-Instruct-v0.2, Google's Gemma-2b) leveraging variations of four major prompting techniques (zero-shot, zero-evidence, few-shot, and chain of thought) to evaluate fairness/factuality accuracy and f1-score from claims in the UniLC benchmark dataset on GCP VMs.
- Developed and fine-tuned custom prompts through prompt engineering to optimize model performance across different prompting techniques and models, leading to a 11% and 14% improvement in accuracy and F1-score respectively.
- Achieved 78% accuracy and 0.75 F1-score on testing dataset using the Mistral-Instruct model to generate evidence for zero-evidence-evaluation prompting on the Phi-2 model to generate predictions.

Deep Learning Models for EEG Classification | *Machine Learning Engineer* January - March 2024 | Los Angeles, CA

- Investigated and designed CNN, LSTM, CNN+RNN, and CNN+LSTM architectures using PyTorch and data preprocessing techniques (data cropping) on classification of 4-class motor imagery EEG signals (BCI Competition IV, Dataset 2a).
- Achieved ~73% classification accuracy on all-subject testing with the CNN model and ~68% classification accuracy on subject-wise testing with the CNN+LSTM model.

Software Engineering Intern at Murata Electronics | *Full-stack Developer* June - December 2023 | Carrollton, TX

- Designed and implemented an Expo React Native service application prototype which enables a carrier agnostic route to connect cellular IoT devices to cloud services via Azure IoT Hub.
- Aimed to facilitate cellular IoT end device application development and reduce time-to-market for clients.
- Visualized device JSON data routed through Azure IoT Hub event groups and controlled/configured a device from app using direct methods/device twin's desired properties using a Node.js and Express.js backend.

RESEARCH

Laboratory Research at UCLA | *Research Assistant under Dr. Gerard Wong* April 2022 - January 2024 | Los Angeles, CA

- Evaluated single-cell image segmentation performance of a deep-learning model against human-generated (ground truth) and MATLAB model generated segmentations with DICE dissimilarity scores and IoU metrics.
- Achieved 0.001 average DICE score and 0.998 average IoU score between deep-learning model and ground truth.
- Demonstrated increased segmentation performance over previous MATLAB model with 0.06 average DICE and 0.899 average IoU scores against ground truth.
- Facilitated further research by improving image segmentation accuracy on clustered images with overlapping cells.

EXTRACURRICULARS

Tau Beta Pi Engineering Honor Society | *Member* June 2022 - Present **|** Los Angeles, CA

- Conducted 10+ weekly tutoring sessions for undergraduate STEM students in math, physics, and computer science courses.
- Performed science experiments for 50+ students at Brawerman Elementary School to foster interest in STEM.

Biomedical Engineering Society Build Team Technical Project | *Member* October 2021 - June 2022 **|** Los Angeles, CA

- Designed and built functioning pulse oximeter using 3D printed parts and custom printed circuit boards.
- Learned to use 3D CAD software Autodesk, Arduino, circuitry, engineering design process, and coding in C++.

SKILLS

Languages: Python, C++, HTML, CSS, JavaScript, JSX, MATLAB, Bash.

Frameworks: PyTorch, NumPy, Express, React, React Native, Node, Expo.

Tools: Azure, Google Cloud Platform, Git, Visual Studio Code, Scikit-learn, Latex, Pandas, Matplotlib, Autodesk.

HONORS

UCLA Dean's Honor List, Tau Beta Pi, UNT President's List, Presidential Service Gold Award