Alex Fang

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EDUCATION

Carnegie Mellon University | *Masters of Science (ML/NLP @ SCS LTI). GPA: 4.0/4.0* Pittsburgh, PA | December 2025

- **Coursework (In Progress):** Generative AI, Advanced Natural Language Processing, Introduction to Machine Learning
- **Activities:** NeuLab @ CMU

University of California, Los Angeles | *Bachelor of Science in Computer Science. GPA: 3.8/4.0* Los Angeles, CA | June 2024

- **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.
- **Honors:** Dean's Honor List (Winter 2022, Spring 2022)

WORK EXPERIENCE

Murata Electronics | *Software Engineering Intern* Carrollton, TX | June 2023 - December 2023

- 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.

PROJECTS

Factuality and Fairness in LLMs | *UCLA* Los Angeles, CA | January 2024 - March 2024

- 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, in-context learning, 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 | *UCLA* Los Angeles, CA | January 2024 - March 2024

- 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.

RESEARCH

Behavior Box | *Research Assistant under Dr. Graham Neubig* Pittsburgh, PA | September 2024 – Present

- Automatically identifying interpretable regression cases to understand differences in performance across language models.

Laboratory Research at UCLA | *Research Assistant* Los Angeles, CA | April 2022 – January 2024

- 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.

SKILLS

Languages and Frameworks: Python, C++, C, Bash, PyTorch, NumPy.

Tools: Microsoft Azure, Google Cloud Platform, Git, Pandas, Matplotlib, Seaborn.

EXTRACURRICULARS

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

- 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.