

Winter Hua

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EDUCATION

University of California, Los Angeles (UCLA)

Los Angeles, CA

Bachelor of Science, Computer Engineering | GPA: 3.75 | Engineering Honors College

June 2024

Master of Science, Computer Science

June 2025

EXPERIENCE

Algorithm Research and Development Intern

June 2024 – August 2024

Abbott Diabetes Care

Alameda, CA

- Developed deep learning models using PyTorch and AWS SageMaker to predict glucose levels for diabetic patients, achieving a 15% increase in accuracy by combining continuous glucose monitoring data and insulin modalities
- Performed hyperparameter tuning across multiple architectures using grid search and Bayesian optimization
- Created datasets from studies using pandas and NumPy with data cleaning and interpolation for missing data

Machine Learning Intern

March 2024 – June 2024

Hoop

New York, NY

- Engineered an optimized pipeline utilizing advanced LLM prompting techniques to extract purchased items from email receipts, achieving a 200% increase in speed and a 400% reduction in costs
- Developed web scraping techniques to collect data from online reselling platforms, delivering key metrics
- Analyzed data and reported insights on resale value and sell-through rate to improve market understanding

Artificial Intelligence Engineer Intern

June 2023 – September 2023

Lockheed Martin

Sunnyvale, CA

- Designed a foundation computer vision model using TensorFlow within an agile work environment, yielding a novel architecture to generate embeddings for satellite anomaly detection and tracking
- Engineered Keras training loop for transfer learning from a backbone model with a custom unsupervised loss function, resulting in rich embeddings and distinct clusters
- Generated large image datasets from satellite imagery using data augmentation techniques for model training

Undergraduate Researcher

June 2021 – June 2024

Networked and Embedded Systems Laboratory

Los Angeles, CA

MobiVital

September 2022 - June 2024

- Enhanced models from research papers in PyTorch leveraging transformers, LSTMs, and Variational Autoencoders
- Researched deep learning techniques for radar signal reconstruction using generative AI architectures
- Created heartbeat and respiratory signal datasets for wireless vital monitoring with ultra-wideband radar

Capricorn

June 2021 - June 2022

- Published “Capricorn: Towards Real-Time Rich Scene Analysis Using RF-Vision Sensor Fusion.” SenSys '22
- Trained SVM classifier with 97% accuracy to detect internal states of appliances using UWB radar sensors
- Designed data collection strategy to capture vibrational signatures of appliances in varied positions and modes

PROJECTS

LLM Factuality and Fairness Evaluation | *NLP, PyTorch, Hugging Face, GCP*

Jan. 2024 – March 2024

- Engineered a system to evaluate LLMs for language fairness and factuality using PyTorch and HuggingFace
- Designed zero-shot, few-shot, evidence, and chain-of-thought prompting mechanisms and evaluation metrics
- Integrated GPT-3.5 and Mixtral for evidence generation via API endpoints, improving F1-score by 27%

Bruinfessions | *React, Node.js, Firebase, Git, Javascript, CSS*

March 2022

- Architected an anonymous forum, facilitating user engagement through posting, liking, and favoriting features
- Implemented real-time, dynamic content sorting and interaction capabilities leveraging React and JavaScript
- Engineered backend and Google Auth using Firebase and Node.js for data storage, retrieval, and synchronization

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript, HTML/CSS, MATLAB

Frameworks/Tools: React, Node.js, Firebase, Docker, Git, AWS SageMaker

Libraries: PyTorch, TensorFlow, Keras, scikit-learn, Hugging Face, NumPy, pandas, OpenCV, Matplotlib