

# CHUN FAI JEFFREY KWAN

310.775.3865 | jkwan314@ucla.edu | Los Angeles, CA (Canadian Citizen) | [www.linkedin.com/in/jkwan314](https://www.linkedin.com/in/jkwan314) | <https://hametar0u.github.io>

## EDUCATION

### University of California, Los Angeles (UCLA)

Expected June 2025

Computer Science BS (3.90 GPA)

- Coursework: Data Structures and Algorithms, Computer Architecture, Software Construction, Algorithms and Complexity, Operating Systems, Neural Networks and Deep Learning, Linear Algebra (Honors)

## SKILLS

- Languages: Python, C++, Javascript, Bash
- Technologies/Frameworks: Pytorch, Tensorflow, Qiskit, PennyLane, Express JS, Flask, Git, Microsoft SQL Server

## WORK EXPERIENCE

### II-VI (Fremont, CA) | Data Automation Intern | SQL Server, Flask

June 2022 - September 2022

- Rewrote SQL query generating summary data table for Epitaxial layer growth using incremental loading and indexing, improving query time by 10000%.
- Upgrade 2 legacy data collection user interfaces from asp.net to Flask-React tech stack, saving 2 hours per week and reducing IT team burden.
- Proposed merging auto-generated experimental data into a single source on AWS cloud data platform, allowing for efficient data retrieval and reducing SQL server burden by 10%.

### Walk (Los Angeles, CA) | Full-stack Developer | Django, React Native Typescript

February 2022 - September 2022

- Linked frontend pages to backend API endpoints using React Native, Django, and MySQL.
- Assembled walk summary page and UI using React Native and CSS.
- Won 2nd place out of 12 teams in startup accelerator competition.

## RESEARCH

### Quantum Ethics Project | Researcher | PennyLane, Qiskit

May 2022 - Present

- Assess the trainability of Variational Quantum Algorithms and rank these algorithms by immediate social impact and compatibility with intermediate scale noisy devices.
- Collaborate with international group of researchers to anticipate bad uses to advise regulatory frameworks and minimize potential harm.

### Pioneer Academics | Researcher | Jupyter Notebook, NetworkX

February 2020 - July 2020

- Synthesized a 31-page thesis about public reaction to COVID-19 lockdowns on Twitter with UC Berkeley's Professor Eric Friedman ([ejf@icsi.berkeley.edu](mailto:ejf@icsi.berkeley.edu)).
- Programmed in Jupyter Notebook to scrape Twitter data, using Python package NodeX to process over 500,000 Tweets.
- Analyzed user reactions and interactions with sentiment analysis and network analysis, concluding a 200% increase in negative reaction to lockdowns, and isolation of strongly opinionated communities.

## PROJECTS

### ECE C147 Final Project | ??

March 2023 - March 2023

- Coded FCNN and a CNN from scratch.
- Derived the equations for forward and backward propagation by hand and vectorized the operations with numPy.
- Built chatbot trained on the professor's transcripts for text generation and question answering, achieving surprising grammatical coherence.

### UCLAACMAI | Projects Officer | Pytorch

September 2021 - Present

- Applied data augmentation, regularization, and transfer learning to classify Cassava leaves, improving training accuracy to 85%.
- Collaborate with team of 5 officers to construct new projects track, classifying Quora insincere questions using contextual embeddings, recurrent neural architectures, and transformer-based models such as GPT-2 and BERT, achieving top recall of 88%.

### UCLAACM Studio | C#, Unity, MLAgents

January 2022 - June 2022

- Develop in team of 12 for student-led top down adventure-style video game "Wisp".
- Build game interface and symbol recognition system in C# and Unity.
- Use reinforcement learning to develop 4 Hero Artificial Intelligence models.

## RELEVANT EXPERIENCE

### Hackathons | Firebase, ReactJS, Chrome Extension API

February 2022 - Present

- Qiskit FallFest (Nov 2022): Applied Quantum Grover Search to the Proof-of-Work Algorithm, demonstrating a polynomial reduction in compute time. Won 1st place overall out of 20 teams.
- HackMIT (Oct 2022): Construct crowdsourcing knowledge platform, secured by Ethereum blockchain and powered by Computer Vision and Natural Language Processing. Won 2nd place in the "Blockchain for Society" category.
- LA Hacks (Apr 2022): Created web-app facilitating item lending and borrowing in 28 hours using Firebase and ReactJS.