Tianze Liu

Los Angeles, CA ● +1 (213)-610-9663 ● tianzel@usc.edu ● [LinkedIn](https://www.linkedin.com/in/owen-liu-956036289/) ● [Personal Website](https://owenliu50377.github.io/)

# KEY WORDS & SKILLS

**KEY WORDS: Generative AI**, Prompt Engineering, NLP, LLM, Deep Learning, Machine Learning.

**SKILLS**: Python (Torch, TensorFlow, Keras), Langchain, RAG Refinement, Esri ArcGIS (Pro, Script Tool)

# EDUCATION

## University of Southern California

## *Master of Science, Spatial Data Science; GPA 4.0/4.0* Expected May 2025

## Chinese University of Hong Kong, Shenzhen

### Bachelor of Science, Data Science and Big Data Technology

### Li-Yun ScholarshipAugust 2019

# RECENT RESEARCH AND WORK EXPERIENCE (SELECTED)

## China Mobile Research Institute – Generative AI Intern June 2024 – Present

* Built long-text generation model and generated the latest industry policy analysis report with RAG based on **STORM** combined with **Langchain** framework.

## University of Southern California - Research Assistant of Economics April 2024 – Present

* Applied multiple machine/deep learning algorithms including **XGboosting, Attention, Mixture NN** etc. to predict travel time based on travel mode and distances and reduce the MSE to 200 on 4M data.

## Shenzhen Research Institute of Big Data - Research Assistant of Operation November 2022 to May 2023

Institute that focuses on research and applications of Big Data. Developed enhanced spatial operational algorithms.

* Implemented a variable neighborhood search sim-heuristic algorithm to solve the multi-period inventory routing problem under stochastic spatial distribution and demands in 30 minutes on small scale
* Constructed a distributed decision model based on the stochastic demands, fulfilling regular deliveries on the service level and tracking inventory with a preset standard
* Implemented a branch and bound algorithm based on the Hungarian method in combination with a simplex method for complex networks to minimize the costs of a project to build a decision model for the project managers, decreasing the time cost by around 15%

## Byte Dance - AI Engineer Intern May 2022 to June 2022

Internet tech co. that operates machine learning-enabled content platforms to developed AI algorithms

* Built an Intelligent Agent based on **LangChain**, **RAG** and **LLM** to accomplish tasks such as parsing and understanding fund announcement data, answering user questions by multi-modality and accomplished the **Prompt Engineering** based on **CO-STAR** principles.
* Implemented handwritten digits recognition with **TensorFlow**, the Sequential model in **Keras**, and a convolutional neural network based on dark-channel enhanced images
* Identified illegal messages on given websites with a **Naive Bayes** classifier achieving around 75% accuracy