# TIANZE LIU

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## 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* August 2019

## HONORS AND REWARDS

- 10th NVIDIA Sky Hackathon (Rank 11/50) July 2024
- Generative AI Contest by China Merchants Bank Co., Ltd. (Rank 143/2000) May 2024
- Li-Yun Scholarship August 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**

**University of Southern California - Research Assistant** 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** 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 (TikTok) - 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