

+1 (213)-610-9663 • tianzel@usc.edu
<https://owenliu50377.github.io/>
[linkedin.com/in/owen-liu-956036289](https://www.linkedin.com/in/owen-liu-956036289)

EDUCATION

University of Southern California

Master of Science, Spatial Data Science; GPA 3.65

Los Angeles, California

Expected May 2025

Chinese University of Hong Kong, Shenzhen

*Bachelor of Science, Data Science and Big Data Technology,
Li-Yun Scholar; GPA 3.05*

Shenzhen, Guangdong, China

August 2019

RESEARCH AND WORK EXPERIENCE

University of Southern California

Research Assistant – Department of Economics

Los Angeles, California

March 2024 to Present

Develop a machine learning framework to predict travel times from travel survey data.

Shenzhen Research Institute of Big Data

Research Assistant – Operation Research Department

Shenzhen, Guangdong, China

November 2022 to May 2023

An institute that focuses on the research and the application of Big Data. Developed enhanced algorithms to solve spatial operational problems and provided distribution strategies.

- 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 Attention model to generate text based on Advanced Transformers like MegaLodon.
- Implemented a branch and bound algorithm based on the Hungarian method in combination with a simplex method for complex networks to build a decision model for the project managers, decreasing the time cost by around 15%

Byte Dance

AI Engineer Intern – AI Development Department

Beijing, China

May 2022 to June 2022

An Internet technology company that operates various machine learning-enabled content platforms. Developed and refined AI algorithms and applied them in real-world situations

- Implemented handwritten digits recognition with TensorFlow, the Sequential model in Keras, and a 2-D convolutional neural network
- Identified illegal messages on given websites with a Naive Bayes classifier achieving around 75% accuracy
- Performed exploratory data analysis of UCI's Horse Colic Data Set, and predicted the survival or death of horses based on their medical conditions with Adaboost, achieving high accuracy

ZZNode Technology

Database Engineer Intern

Shenzhen, Guangdong, China

March 2022 to May 2022

An Internet technology company that provides database services. Managed entities in database, conducted some data analysis based on SQL, and fulfilled internal requests through a self-built database with SQL.

- Built with SQL and Python (UI) a database of bridges in the US with over 760,000 entries and 200 attributes of technical and maintenance details
- Conducted with Graphviz (for visualization) exploratory data analysis via the classification and regression tree (CART) model, K-means clustering, and principal component analysis (PCA) to identify the durability and economic efficiency of bridges in question

ADDITIONAL INFORMATION

Applications: Proficient in Python (TensorFlow, Keras, Pytorch) and ArcGIS Pro; MySQL, MATLAB, C++.

Languages: Proficient in Chinese

Skills: Data Analysis, AI Programming, Database Maintenance, Raster Analysis, 3D mapping.