Chien-Hao (Will) Huang

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Education

- **National Taiwan University** — Taipei, Taiwan
  M.S. in Civil Engineering (Transportation Division) — *Sep 2020 – Jun 2022*
- **Tamkang University** — New Taipei City, Taiwan
  B.S. in Transportation Management — *Sep 2017 – Jun 2019*

Experience

- **Garmin** — Taoyuan, Taiwan
  Data Scientist — *Aug 2024 – Present*
  - **Continuous Optimization of RMA Prediction Model**: Enhanced model accuracy by 5% through exploratory data analysis (EDA) to extract key features and apply feature engineering techniques to the existing transformer-based model.
  - **Dashboard Development and Maintenance**: Developed and customized visual dashboards using QlikSense based on user requirements, enabling users to uncover insights easily.
- **Gastom LPG E-Commerce** — Taipei, Taiwan
  Data Scientist — *Jul 2023 – Aug 2024*
  - **Delivery Route Optimization**: Developed optimization algorithms using Google OR-Tools for freight delivery, improving around 70% of routes and significantly reducing labor hours.
  - **Clustering Algorithms for Route Optimization**: Designed clustering algorithms to replace time-window constraints in vehicle routing problems, improving solution efficiency and enabling scalability for larger problems.
  - **ML Modeling for ETA Prediction**: Built machine learning models by leveraging historical GPS data to predict the estimated time of arrival (ETA) for each delivery, enhancing user experience by ensuring ETA accuracy within a 5-minute error margin.
- **CECI Engineering Consultants, Inc. Taiwan** — Taipei, Taiwan
  Traffic Data Analyst — *Sep 2022 – Jun 2023*
  - **Data Processing & Analysis**: Processed and analyzed traffic data using Python to assess pre- and post-implementation changes of the weight-in-motion (WIM) system.
  - **Statistical Analysis**: Evaluated the effectiveness of the weight-in-motion (WIM) system using statistical tests in Python (SciPy) based on traffic flow analysis.
  - **Report Writing**: Summarized and interpreted data analysis results into comprehensive reports for stakeholders.

Projects

- **Time-Series Forecasting for Highway Traffic**: Built a deep learning-based time-series forecasting model for predicting highway traffic volume and speed and won an honorable mention in the 2024 Intelligence Transportation Management Competition held by the National Freeway Bureau, Ministry of Transportation and Communications, Taiwan.
- **Deep Reinforcement Learning for Traffic Signal Control**: Developed a reinforcement learning-based algorithm for real-time traffic signal control, reducing vehicle delay by approximately 6% compared to traditional fixed-time control methods, demonstrating the potential of RL in urban traffic management.

Skills

- **Languages**: Python, SQL
- **Technologies**: PyTorch, TensorFlow, Apache Airflow, MLflow, Git, Docker, QlikSense
- **Expertise**: Deep Learning, Machine Learning, Reinforcement Learning, Operations Research, Statistical Analysis, Data Analysis, Data Visualization