Jeff Tseng

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EDUCATION

- **National Taiwan University** — *GPA 3.92/4.0*
  Bachelor of Science in Computer Science and Information Engineering — *2019 – 2023*

ON-CAMPUS EXPERIENCE

- **NTU CSIE Network Administration and System Administration**
  Lead of Wired Network Team — *2022 - 2023*
  - Develop the daily log synchronization tools that integrate with Google Spreadsheet.
  - Develop the network infrastructure parser and visualization toolkit.
  - Lead the junior member to complete the project of command line interface for HP switch.

- **DLCV** — Deep Learning for Computer Vision
  Teaching Assistant — *2022 Fall*
  - Design questions for assignment and hold dedicated TA hours.

- **VLLab** — Vision & Language Lab
  Undergraduate Research Student — *2022*
  - Research on framework of different training scenario for text guided image manipulation.

- **CMLab** — Communications & Multimedia Lab
  Undergraduate Research Student — *2022*
  - **Orbeez-SLAM**: accepted by ICRA 2023

- **Miulab** — Machine & Intelligence Understanding Lab
  Undergraduate Research Student — *2021 Fall - 2022 Spring*
  - Research on enhancing Automatic Speech Recognition (ASR) and Spoken Language Understanding by natural language pretraining.
  - Arrange over **20 cross-modal (text and speech) tasks** between text and audio, their benchmarks and datasets.

- **Data Structure and Algorithms**
  Teaching Assistant — *2021 Spring*
  - Design activity about data structure with Kahoot and online judge platform.

PUBLICATION

- **Orbeez-SLAM** — CMLab
  A Real-time Monocular Visual SLAM with ORB Features and NeRF-realized Mapping — *2022/09*
  - accepted by ICRA 2023
  - Use **CUDA & C++** to migrate **instant-ngp NeRF** to **ORB-SLAM** to achieve **3D scene reconstruction** with **800x speedup** over other NeRF-based SLAMs.
  - Achieve better reconstruction quality and more precise localization and mapping (lower ATE).

SIDE-PROJECT

- **Coughvid**: Integrate audio models by **Pytorch** for cough detection and linear models for clinical data to a **Flask** API designed for **COVID-19** cough detection.

- **Japanese Memorizer App**: Develop vocabulary learning mobile application with **Flutter, bloc**, **firebase** backend, and the CI/CD pipeline on **codemagic**.

- **nvtop modification**: Add user filtering feature, in **C**, to an open source GPU monitoring tool - nvtop.

EMPLOYMENT HISTORY

GoGoX

- *Software Engineer, Data Scientist* — *Jun, 2023 - present*
  Data Scientist Intern — *Sep, 2022 - Jun, 2023*

  - **Working Time Labeling**:
    - Develop an **ML algorithm** with **feature selection** on label driver GPS data and order data to **automate the labeling process** of pickup and arriving time.
    - **Identify the anomaly** behavior of driver with **autoencoder** to help filter out cases unsuitable for labeling model.
    - **Analyze the correlation** between GPS data and order data to explore room for improvement.

  - **GPS Map Matching**:
    - Build the driver travel time database to improve pick up estimation model and order working time model.
    - Use **Python shapely** to map GPS point to most probable road segment on **OpenStreetMap**.
    - Find the route with Hidden Markov Model with **Python** given possible road segments.
    - Validate correctness of the algorithm by visualizing **OpenStreetMap** and GPS track with **Python folium**.

  - **GoGoX QA Bot**:
    - Design the pipeline based on **OpenAI**, **Pinecone**, and **Langchain** to support **customized ChatGPT** with **prompt engineering**.
    - Ingest the customer service data to **Pinecone** as the **vector database**, the knowledge base of the ChatBot.
    - Expose the ChatBot as API and web interface on **Google Cloud**.

ASUS   Intelligence Cloud Service

- *Software Engineering Intern* — *Jul 2022 - Sep 2022*

  - **Selenium IDE Modification**:
    - Add popup menu to original IDE with **Electron** and **NodeJS** to support additional functions and **facilitate the testing** phase.
    - **Eliminate 19** out of **23** testcases that is unable to be automatically recorded with **our modified Selenium**.