

Taoyuan Wang

+1-669-609-3436 | alanwanga@icloud.com | [linkedin.com/in/taoyuanwang](https://www.linkedin.com/in/taoyuanwang) | San Francisco Bay Area

EXPERIENCE

Software Engineer in Alphabet's Wing

10/24/2022 – Present

UAS (Uncrewed Aircraft Systems) Traffic Management (UTM) Team

Palo Alto, CA

- Designed and developed distributed real-time applications for Google X Development's autonomous drone delivery project, now a subsidiary of Alphabet, serving the next generation of aviation
- Implemented configuration systems and operator interfaces based on Google Maps, enabling timely four-dimensional (three-dimensional plus time) restriction annotations and enforcement, ensuring adherence to safety protocols
- Worked on C++ Scaffolding backend handlers and validators using Protocol Buffers and S2 Geometry Library (e.g. polygon self-intersection, vertices duplication, loop clockwise, gRPC retry logic to avoid race conditions, etc)
- Migrated geospatial data to new schema in Google Cloud Spanner, visualizing historical fleet records with analytical query engine within Alphabet infrastructure, enabling metric monitoring and alerting for the critical ecosystem

Software Engineer in Appen US

10/01/2021 – 10/21/2022

Computer Vision Tools Team

Sunnyvale, CA

- Led the design and development of AI-assisted annotation tools for multi-modal data, guiding the projects from initial prototyping to full production (frontend with React and Three.js, backend with Flask and Spring)
- Extended point cloud cuboid annotation to semantics segmentation as a side project then was adopted as a new product, attracting 20+ leading clients in the autonomous vehicle and robotics sectors

Software Engineer in Appen China

04/01/2019 – 09/30/2021

Computer Vision Tools Team

Shanghai, China

- Built for China platforms to support local market, serving as the founding engineer for Appen China
- Researched on point cloud object detection/tracking to enhance annotation efficiency using open source projects
- Conducted sensor fusion experiments based on client device parameters (e.g. LiDAR/camera position, rotation, focal length, etc) with NumPy to project points from 3D to 2D domain
- Implemented event loggers, collaborated with UX designers and data scientists to study the behavior of annotators for training process and annotation tools improvement, resulting in a 56% reduction in labelling costs

Software Engineer in Works Applications

04/02/2018 – 03/29/2019

AI WORKS HUE Tech Lead Group

Shanghai, China

- Developed product frontend with Vue.js
- Developed product backend with Spring, Hibernate and JUnit

Research Assistant in Academia Sinica

12/13/2017 – 03/09/2018

Natural Language Processing Lab

Taipei, Taiwan

- Researched on Chinese short-text conversation chatbot
- Implemented sequence to sequence models with PyTorch
- Maintained a large repository of post-comment pairs from Weibo datasets
- Leveraged the appropriateness scores of comments as reward for reinforcement learning

Military Service in Social Welfare Department

11/10/2016 – 10/27/2017

IT Specialist for documents persistence and systems maintenance

Tainan, Taiwan

EDUCATION

National Tsing Hua University

Hsinchu, Taiwan

M.S. in Computer Science (Researched in Internet Lab)

Sep 2015 – Aug 2016

National Tsing Hua University

Hsinchu, Taiwan

B.S. in Computer Science (Exchanged to Beijing Tsinghua and Nagoya University)

Sep 2010 – Aug 2015

SKILLS

Languages: Python, JavaScript, Java, C/C++

Frameworks: Flask, React/Redux, Spring, JUnit, Jest, pytest

Developer Tools: Git, Docker, Jenkins, Jupyter Notebook, PyCharm, WebStorm, IntelliJ IDEA

Libraries: NumPy and WebGL using Three.js for 3D data visualization