

Taoyuan Wang

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EXPERIENCE

- Software Engineer in Wing (Alphabet/ex-Google)** 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