Taoyuan Wang

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EXPERIENCE

Software Engineer in Alphabet's Wing
UAS (Uncrewed Aircraft Systems) Traffic Management (UTM) Team

10/24/2022 – Present
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
Computer Vision Tools Team

10/01/2021 – 10/21/2022
Sunnyvale, CA

- Led the design and development of AI-assisted annotation tools for multi-modal data (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
Computer Vision Tools Team

04/01/2019 – 09/30/2021
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
AI WORKS HUE Tech Lead Group

04/02/2018 – 03/29/2019
Shanghai, China

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

Research Assistant in Academia Sinica
Natural Language Processing Lab

12/13/2017 – 03/09/2018
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
IT Specialist for documents persistence and systems maintenance

11/10/2016 – 10/27/2017
Tainan, Taiwan

EDUCATION

National Tsing Hua University
M.S. in Computer Science (Researched in Internet Lab)

Hsinchu, Taiwan
Sep 2015 – Aug 2016

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

Hsinchu, Taiwan
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