Taoyuan Wang

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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 Inc.
- 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 definitions in Google Cloud Spanner and visualized historical fleet records with the analytical query engines within Alphabet infrastructures to serve the next generation of aviation

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 (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