Chia-Chi Hsu

Software Engineer with 3+ years of experience.

CONTACT

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SKILLS

- Golang (Echo, GORM)
- Python (NumPy, pandas)
- JavaScript (React, dva)
- REST • WebSocket • gRPC
- PostgreSQL • Redis • Traefik
- Docker (Docker Compose)
- Git • GitLab CI/CD
- Linux Environment (Ubuntu)
- HLS • WebRTC
- OpenCV • Point Cloud Library

EDUCATION

NATIONAL TSING HUA UNIVERSITY
MSc in Electrical Engineering
2012 - 2014 | Hsinchu City, Taiwan
Mainly focused on Computer Vision; had experience with C++, OpenCV, Point Cloud Library.

NATIONAL TSING HUA UNIVERSITY
BSc in Electrical Engineering
2008 - 2012 | Hsinchu City, Taiwan
Mainly focused on Image Processing; had experience with MATLAB, C++, CUDA C.

WORK EXPERIENCE

ZIG (STARTUP) | Software Engineer • Internet of Things
Jul 2019 - Sept 2020 | Kaohsiung City, Taiwan

- Developed the backend of a low-latency, plugin-free surveillance web viewer by requesting Real Time Streaming Protocol (RTSP) streams from a Network Video Recorder (NVR) and transferring H.264 NAL units to the frontend via WebRTC.
- Created a surveillance video playback service backend using Hikvision NVR's C API to query date information and request Transport Stream (TS) packets; integrated C code into Golang with cgo and provided streams using HTTP Live Streaming (HLS).
- Implemented communication protocols (Modbus, YDN23) in Golang to fetch and write data on industrial electronic devices.
- Built simulated devices for testing and demonstrating our IoT web system.
- Implemented a Docker web UI that could be easily used by our clients by using Golang Docker client API for the backend.
- Created a simple CI/CD pipeline using GitLab CI/CD and kaniko, including Golang code testing, Docker image building and pushing.

WISTRON | Software Engineer • Computer Vision
Dec 2016 - Oct 2018 | Kaohsiung City, Taiwan

- Built a Machine Learning model to classify images of semi-finished products as either OK or NG by training a convolutional neural network with data augmentation on thousands of images.
- Developed a simple but effective segmentation process to segment images of semi-finished products into different regions by using Template Matching.
- Integrated YOLO's pre-trained person detection model into a Person Re-identification system to build an intelligent surveillance system.
- Built a people counter using Kinect, NVIDIA Jetson TX1 and the open-source project OpenPTrack for pedestrian tracking.
- Wrote and maintained a Dockerfile for Machine Learning model development and deployment.
- Utilized gRPC to communicate between Python and C# programs.

PROJECT EXPERIENCE

Quantification of Cranial Asymmetry | Graduate Researcher
Oct 2013 - Apr 2014 | Hsinchu City, Taiwan

- Developed a pipeline to align two sets of 3D point clouds for evaluating the treatment of cranial asymmetry in infants by utilizing Fast Point Feature Histograms (FPFH), Sample Consensus Initial Alignment (SAC-IA) and Iterative Closest Point (ICP).

Accelerating Ultrasound Imaging Using CUDA | Technical Support
Apr 2012 - Oct 2012 | Hsinchu City, Taiwan

- Reduced signal processing time in Ultrasound imaging by 95% by using CUDA C modules to calculate Hilbert transform and Delay-and-Sum.
- Demonstrated CUDA C programing to researchers at Industrial Technology Research Institute.