

# Po-Fang(Daniel) Hsu

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## Experience

### Software Engineer

Garmin (Asia) Corp.

Aug. 2017 -- Aug. 2019

Division of Cartography Production

New Taipei, Taiwan

- Extracted features from millions of street views segmented into semantically meaningful parts, then integrated GIS database to optimize routing on vehicle navigation. Improved 47.3% routing speed of road in specific area.

#Statics #OpenCV #FCN

- Developed the object detection and recognition models for interested features in cartography, such as
  - 102 kinds of traffic signs, traffic lights(including designed & constructed a 60K stratified sampling dataset and applied AdaBoost method to adapt countryside/mountains, suburban and urban area),
  - roadside parking lots(including designed & constructed a 700 dataset),
  - road lanes and lane markings(prototypes),then detected changes of features in different timeframe automatically to speed up the operation of computer assisted cartography by 30%~50% successfully. Finally, built up the active learning based feedback pipeline to collect more data efficiently for improving model.

#FPN #DEEPLAB #VPGNet #Camera Models (Calibration & Triangulation) #AdaBoost #Active Learning

- Constructed CI/CD pipeline, then designed and deployed the DNN based microservices on a GPU enabled Kubernetes cluster made of 1 CPU node and 3 physical distributed GPU-enabled nodes to serving 200K 5M pixels street images every day.

#Jenkins X #Harbor #Kubernetes #CI/CD

- Integrated Garmin TW-MAP Knowledge Base API and Microsoft Bot Framework to develop a dialogue system for POI searching. #Luis.ai #.Net

### Research Assistance

Taiwan Information Security Center

Jan. 2016 -- Jun. 2016

TWISC@NCHU

Taichung, Taiwan

- Developed a MQTT based communication architecture using on our smart grid. #MQTT
- Researched the privacy protection issue and implemented k-anonymity and  $\delta$ -privacy for our smart grid. #Anonymisation
- Applied HMM to disaggregate power usages. #HMM #Power Disaggregation

### Software Engineer, Intern

Industrial Technology Research Institute

May. 2015 -- Dec. 2015

INFORMATION AND COMMUNICATIONS RESEARCH LABORATORIES

Hsinchu, Taiwan

- Android App Development #Android 6.0 (Card View & Weight & Navigation Drawer)
- Location-based and Preference-Aware Recommendation #Topic Model #Recommendation Systems #Bag-of-words

## Education

Taichung, Taiwan

National Chung Hsing University

Sep. 2014 -- Jul. 2016

- M.S. in Computer Science and Engineering. Overall GPA: 3.88/4.3.
- On Semantic Annotation for Sport Video Highlights by Mining User Comments from Live Broadcast Social Network, BWCCA 2018

Miaoli, Taiwan

National United University

Sep. 2010 -- Jun. 2014

- B.S. in Computer Science and Information Engineering. Last 60 GPA: 3.4/4.0.

## Additional Experience and Awards

- **2017 Summer D4SG Fellowship, A Analysis of City-level Medical Referral System - A Case Study of Kaohsiung:** Data Engineer. With the guidance of DSP Inc. and Dep. of Health Kaohsiung City.
- **Finalist, 2016 Taipower Open Data Hackathon:** Team Leader. Tried to reduce energy costs by virtualizing power consumption data collected by Taipower Inc. on web. [8/15]
- **Finalist, 2016 Fishackathon in Taipei:** Team Leader. Developed a fish classification Android App using Bag of Words model. Intended to improve bycatch and overfishing by rapid fishes recognizing. [19/26]
- **Marketing Division, 1st NCHU Art Festival:** Organized a student activity. Planed and executed some marketing proposes and art exhibits applying QR code and Arduino technic for promoting funds raising on flyingV, a crowdfunding platform, successfully.
- **First Prize, 2014 NUU CSIE Special Projects on Information Competition:** Team Leader. Completed a social network platform for family member.[1/16]

## Other Skills

- Vantage English, TOEFL iBT: 72; Vantage Japanese, JLPT: Level N2; Native Mandarin Chinese