Wang Pi

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### **EDUCATION**

University of California, San Diego

M.S. Computer Science, GPA:3.71/4

**Peking University** 

B.S. Electronic Engineering, GPA:3.74/4

La Jolla, CA
Sept 2019 – Dec 2020 (Expected)

Beijing, China Sept 2015 – Jul 2019

#### **EXPERIENCE**

#### Advanced Communication Lab Research Intern, Peking University

Feb 2019 - Jun 2019

- Worked on unsupervised malicious user detection in cooperative localization in the vehicular networks.
- Proposed an sequential clustering detection algorithm to identify users that send bogus location observations.
- Validated detection accuracy improvement and computation efficiency with full simulation in MATLAB.

System Energy Efficiency Lab Research Intern, University of California, San Diego Jul 2018 – Sept 2018

- Worked on a novel learning framework for embedded systems: binary hyper dimensional (BinHD) computing.
- Designed a highly efficient two-level architecture for BinHD, obtained precise performance and energy efficiency data through full simulation and verification.

# **TECHNICAL SKILLS**

- Programming Languages: Python, C/C++,MATLAB [Familiar]
- o Tools: Socket, XMLRPC, PyTorch, Scikit-Learn, OpenCV, Linux, Git, Vim[Familiar], LLVM [Basic]

### **PUBLICATIONS**

- W. Pi, P. Yang, D. Duan, C. Chen, X. Cheng, L. Yang, "Malicious User Detection for Cooperative Mobility Tracking in Autonomous Driving", IEEE Internet of Things Journal (Top journal, impact factor 9.515).
- W. Pi, P. Yang, D. Duan, C. Chen, X. Cheng, L. Yang, "Dynamic Model based Malicious Collaborator Detection in Cooperative Tracking", IEEE Wireless Communication and Networking Conference (WCNC), 2020.
- M. Imani, J. Messerly, F. Wu, W. Pi, T. Rosing, "A Binary Learning Framework for Hyperdimensional Computing", IEEE/ACM Design Automation and Test in Europe Conference (DATE), 2019.

# **PROJECTS**

#### Surfstore

- o Implemented a distributed fault tolerant file synchronizing service that supports version control and multiclients concurrent accessing. Deployed it on AWS EC2 in a small scale and conducted various testing.
- Client-server communication is implemented with **XMLRPC** in **Python**. Fault tolerance implementation on the server cluster is based on **RAFT** consensus protocol.

#### Cat Camera

Implemented a photography app demo that can detect cat faces and add decorations automatically. Frontend
is developed with HTML and Javascript. Image processing module on backend server is based on Python
and Tensorflow. Client-server communication is achieved with Express framework in Node.js.

#### Web Server using HTTP 1.1 protocol

o Implemented a multi-threading web server based on C++ socket API. It responses GET requests from multiple clients concurrently and supports long time connection and pipeline requests to improve the efficiency.

#### Semantic Recognized Real-time Style Transfer

 Integrated cutting edge real-time arbitrary style transfer approach with semantic segmentation technique with PyTorch to develop real-time multi-style transfer camera application which can apply different styles to human and background in video dynamically.

#### **Rating Prediction on Clothes Renting Dataset**

o Combined latent factor model and feed-forward neuron network with TF-IDF feature engineering in **PyTorch** to achieve the rating prediction on the RentTheRunWay dataset which contains 180K review records.

# **LLVM Dataflow Analysis**

o Implemented a dataflow analysis framework based on lattice theory in **LLVM**. Based on that framework, developed analysis passes to dynamically analyze the branch bias information of programs during runtime and statically analyze the reaching definitions and liveness of variables.

# **SELECTED AWARDS**

Excellent Graduate Student of Peking University (Top 10%)

Jul 2019

Merit Student of Peking University (Top 10%)

Sept 2018

Merit Student of Peking University (Top 10%)

Sept 2017