Wang Pi

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EDUCATION

University of California, San Diego — **La Jolla, CA**
M.S. Computer Science, GPA:3.74/4 — *Sept 2019 – Dec 2020*

Peking University — **Beijing, China**
B.S. Electronic Engineering, GPA:3.74/4 — *Sept 2015 – Jul 2019*

EXPERIENCE

Douyin Backend Software Development Engineer, Bytedance Ltd *Mar 2021 – Present, Beijing*

- Work on feature engineering, automatic online learning label creation and machine learning model structure improvement of Douyin notification recommendation system.

Douyin Backend Software Development Intern, Bytedance Ltd *Jul 2020 – Jan 2021, Beijing*

- Worked on content recall strategy development of notification recommendation for Douyin(Tik Tok Chinese Version). Specifically, implemented the recommendation logic for *following accounts have new posts* notification.
- Worked on personal feed recommendation of music & sticker page of TikTok. Specifically, implemented the *friends' videos with same music or sticker* recommendation feature.

Advanced Communication Lab Research Intern, Peking University *Feb 2019 – Jun 2019, Beijing*

- 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, UC San Diego *Jul 2018 – Sept 2018, La Jolla*

- 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], **Bash**[Basic]
- Tools: **Socket, RPC, 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

- Implemented a distributed fault tolerant file synchronizing service that supports version control and multi-clients 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

- 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

- 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

- 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