

Yu-Ju LEE

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Education

University of Colorado Boulder, Boulder, Colorado USA
PhD., Computer Science, GPA 3.90

Aug 2015 – May 2020

University of Southern California, Los Angeles, California USA
M.S., Electrical Engineering, GPA 3.55

Aug 2008 – May 2010

National Chung Cheng University, Chia-Yi, Taiwan
B.S., Electrical Engineering, GPA 3.65

Sep 2001 – Jun 2005

Technical Skills

- Programming Languages: C, C++, Python, Shell Script
- Framework: Scikit-learn, Pandas, TensorFlow, OMNEST, NS-3, OmniPeek, GIT
- Expertise: machine learning, software/hardware system co-design, Windows/Linux driver development, Wi-Fi, Bluetooth, LTE

Academic Projects

Machine Learning Application on Meteorological Data

Aug 2017 – Present

- Build a decision support system with deep learning to identify severe weather phenomenon from 40GB model simulation data images with 93% accuracy (Python/TensorFlow)
- Use image similarity to estimate the intensity of tropical cyclones from 30GB satellite images by machine learning and deep learning models with less than 20 RMS (Python/PyTorch)

Distributed Deep Learning Project

Jun 2017 – Present

- Develop a distributed consensus system to collaboratively learn a shared prediction model and ensure local sensing data privacy and enhance 20% model training speed by OpenMP acceleration (Torch/C++)

Industrial Experience

Systems Engineering Internships – Qualcomm Atheros, San Jose, USA

May 2018 – Aug 2018

- Developed machine learning algorithm to control Adaptive Noise Immunity of Wi-Fi to enhance throughput performance (Scikit)
- Collected Wi-Fi RF sensing data and built an indoor mapping system through deep learning (Python)

Systems Engineering Internships – Qualcomm Research, New Jersey, USA

Jun 2016 – Aug 2016

- Designed a smart logging software system of small cells to locate critical timing to debug and perform system profiling
- Implemented hosts simulation to verify and evaluate the performance of the smart logging software system (C/C++/Python)

System Architecture Design Engineer - MediaTek, Taiwan

April 2011 – July 2015

- Developed rate adaptation algorithms for 802.11ac SU/MU-MIMO wireless systems, simulated the algorithm by OMNEST network simulator and correlated with field trial measurement (C/C++/OMNEST)
- Designed coexistence architecture of Wi-Fi/Bluetooth/LTE combo chip by time and frequency domain management. led projects from feature evaluation, functions design, chip emulation and validation, system performance tuning to max production stage
- Brought up initial firmware, FPGA driver and automation test tools for system architecture design and performance evaluation (C/Python/Linux Driver)

Selected Publications

- **Lee, Yu-Ju**, et al. "Machine Learning for Targeted Assimilation of Satellite Data." Joint European Conference on Machine Learning and Knowledge Discovery in Databases. Springer, Cham, 2018.
- **Lee, Yu-Ju**, et al. "Using Deep Learning for Targeted Data Selection, Improving Satellite Observation Utilization for Model Initialization.", Oral Presented at AMS 17th Conference on Artificial Intelligence, Austin, TX (Honorable Selection)
- **Lee, Yu-Ju**, and Eric Wustrow. "OverTorrent: Anticensorship without centralized servers." In Privacy, Security and Trust (PST), 2016 14th Annual Conference on, pp. 388-391. IEEE, 2016.
- **Lee, Yu-Ju**, Ming-Chun Huang, Xiaoyi Zhang, and Wenyao Xu, "FridgeNet: A Nutrition and Social Activity Promotion Platform for Aging " IEEE Intelligent Systems Journal (IS), Volume 30, Issue 4, July-August 2015, Pages 23 - 30

Selected Patents (2 of 9 U.S. patents)

- **Lee, Yu-Ju**, Cheng-Lung Tsai, Hao-Sheng Hsu, and Hui-Kuang Tseng. "Method and Wireless Communication Device for Antenna Deployment Determination." U.S. Patent No. 9,692,532. 27 Jun. 2017.
- **Lee, Yu-Ju**, Hao-Sheng Hsu, and W. U. Pao-Chen. "Method of managing communication traffic for multiple communication technologies and communication device thereof." U.S. Patent No. 9,408,149. 2 Aug. 2016.