Yu-Ju Lee

5002 Sheboygan Ave Apt 120 Madison, WI 80302		gdirection@gmail.com
(213)537-6588		http://gdirection.github.io/

Education

University of Colorado Boulder, Boulder, Colorado USA PhD., Computer Science, GPA 3.96	Aug 2015 – Aug 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, PyTorch, OMNEST, NS-3, OmniPeek, GIT
- Expertise: machine learning, software/hardware system co-design, Windows/Linux driver development, Wi-Fi

Work Experience

Software Developer – Epic Systems, Madison, WI, USA — Mar 2021 – Present
- Develop Restful APIs for 11 HL7 FHIR resources for electronic health record data exchange
- Reduce 1/3 memory footprint of existing FHIR backend infrastructure for faster response time
- Build a backend prototype of concurrent data retrieval to improve data pipeline efficiency

Post-Doctoral Researcher – CIRES, Boulder, CO, USA — Sep 2020 – Feb 2021
- Developed a system to locate and analyze midnight temperature maximum from WAM-IPE model simulation results (Python)
- Led machine learning projects to identify spread-F in ionograms by deep learning methodologies

Systems Engineering Internships – Qualcomm Atheros, San Jose, CA, USA — May 2018 – Aug 2018
- Developed a machine learning algorithm to control adaptive noise immunity feature for Wi-Fi throughput enhancement (Scikit)
- Collected Wi-Fi RF sensing data to build a deep learning based indoor mapping system (Python)

Systems Engineering Internships – Qualcomm Research, Bridgewater, NJ, 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 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. Brought projects from feature evaluation, function design, chip emulation and validation, system performance tuning to the max production stage
- Brought up initial firmware, FPGA driver and developed automation test tools for system architecture design and performance evaluation (C/Python/Linux Driver)

Side Project

Invited researcher – National Taiwan Ocean University, Keelung, Taiwan — July 2021 – Present
- As a research leader for the project “Applying machine learning techniques to reconstruct the missing satellite image data for temperature of ocean surface current”
- Lead 3 team members to develop methodologies, build data pipelines, and track project progress

Selected Publications

- **Lee, Yu-Ju**, et al. "Interpretable tropical cyclone intensity estimation using Dvorak-inspired machine learning techniques." Engineering Applications of Artificial Intelligence 101 (2021): 104233.
- **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

- **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.