Peter Wei

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Ph.D. candidate in electrical engineering with experience in conducting original research and applying machine learning and AI techniques and algorithms to big data in real-time IoT systems and software systems.

Education

Columbia University (Expected Graduation May 2021) **New York, NY**
Ph.D. Candidate, Electrical Engineering, GPA: 3.8, Presidential Fellowship *2016–Present*

Carnegie Mellon University **Pittsburgh, PA**
M.S. Electrical and Computer Engineering, GPA: 3.7 *2015–2016*
B.S. Electrical and Computer Engineering, GPA: 3.9, University Honors *2011–2015*

Technical Skills

Programming: Python, C/C++, Matlab, Golang, Swift, Android, HTML, JavaScript, x86 Assembly, Arduino

Tools and Software: Hive SQL, MongoDB, Git, LaTeX, OpenCV, TensorFlow, SystemVerilog

Experience

Wish **San Francisco, CA**
Engineering Intern *Summer 2019*

- Implemented real-time user action logging and xgboost models to predict future merchandise profit.
- Designed daily tools to better analyze effects of new features on revenue and click through rate.
- Launched A/B testing experiments based on analysis of new user behavior with preliminary increases in new user GMV between $0.5 - 1\%$.

Intelligent and Connected Systems Laboratory, Columbia University **New York, NY**
Ph.D. Student *2016–Present*

Analysis and Visualization of Personal Energy Consumption

- Deployed a web server for analyzing measured energy consumption data from a building sensor network.
- Designed a tripartite graph data structure and low runtime algorithms for computing energy consumption.
- Developed an iOS/Android application for visualizing real-time personal energy consumption.

Recommender System for Energy Savings

- Implemented a recommender system to output real-time energy saving recommendations using deep Q-Learning.
- Ran simulations and developed a mobile application for a focus group study to show potential energy savings.

The Robotics Institute, Carnegie Mellon University **Pittsburgh, PA**
Graduate Research Assistant *Spring 2016*

- Developed an Android app module for logging car diagnostics data over Bluetooth.
- The module improved GPS localization accuracy through wheel RPM and accelerometer data.

iRobot Corporation **Bedford, MA**
Software Engineering Intern *Summer 2015*

- Designed and implemented a low-power sensing system for detecting floor types for the Roomba.
- Trained random forest and SVM classifiers to differentiate 3 types of surfaces with $> 90\%$ accuracy.
- System and experiments served as a precursor to the Carpet Boost technology in newer Roomba models.

GRASP Laboratory, University of Pennsylvania **Philadelphia, PA**
Undergraduate Research Assistant *Summer 2014*

- Implemented a heuristic search algorithm (D* Lite) for a mobile robot in an cluttered, unknown environment.
- Algorithm enabled real-time map updates as the robot traverses the environment.