Kuo-Wei **Lee**

SOFTWARE DEVELOPMENT ENGINEER

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Education

Carnegie Mellon University   *Moffett Field, CA*

M.S. IN SOFTWARE ENGINEERING   *Jan. 2021 - May 2022(expected)*

- Selected Relevant Coursework (summer semester, 2020): Building Reliable Distributed System, Machine Learning for Engineers

National Tsing Hua University   *Hsinchu, TW*

M.S. IN COMPUTER SCIENCE   *Sep. 2018 - Jan. 2020*

- GPA: 4.13/4.30
- Selected Relevant Coursework: Computer Vision, Computer Graphics, Deep Learning, Artificial Intelligence and Literature/Music
- Won SLAM Competition - 3D indoor reconstruction ($2^{nd}/16$), IPPR Conference on Computer Vision, Graphics and Image Processing (CVGIP)

National Tsing Hua University   *Hsinchu, TW*

B.S. IN COMPUTER SCIENCE   *Sep. 2014 - June 2018*

- GPA: 3.61/4.0
- Honorable-mention Project Award - Scene Recognition and Localization from 360 images, Contest of Special Topics on Implementation, NTHU

Professional Experience

National Tsing Hua University   *Hsinchu, Taiwan*

VISION AND LEARNING LAB (SUPERVISED BY PROF.HWANN-TZONG CHEN)   *Jan. 2020 - Aug. 2020*

- **Kuo-Wei Lee**, Shih-Hung Liu, Koichi Ito and Hwann-Tzong Chen. SilhouetteNet: 3D Hand Pose Estimation from Silhouettes. In arXiv preprint arXiv:1912.12436
- Developed deep networks with 3D point cloud feature extraction for vehicle localization (i.e. Constructed 3D map by spatial features and implemented matching mechanisms)

Digital Drift Corp.   *Taipei, Taiwan*

SOFTWARE DEVELOPMENT ENGINEER, PART-TIME   *July. 2018 - Dec. 2019*

- Developed UI/UX with user study research (mainly iOS) in a social mobile app concerning food dairy, named Bite! - An app for foodies
- Implemented image matching and classification system for $50k^+$ download app with $10k^+$ daily users
- Cooperated with US team to improve the system by computationally efficient image classification and object detection
- Constructed a smart trading system which predict the NBA cards price trending on Ebay and provide user friendly interface, named CardCool.

Umbo Computer Vision   *Taipei, Taiwan*

COMPUTER VISION ENGINEER INTERN   *Sept. 2018 - June. 2019*

- Developed person re-identification (ReID) system pipeline for University Security Project sold at USD $33,000$, i.e. from real-time camera streaming, person feature extraction, time cost analysis in each stage, to report person identities
- Experimented various implementations of approximate nearest neighbor (ANN) search for ReID features in terms of speed and accuracy
- Implemented a ReID prototype consisting of offline data collection, on-the-fly search and Redis database, and constructed demo HTML website
- Improved part of the system pipeline reliability and managed large scale system, i.e. solving dependency, concurrency and fast search
- Liaised between research team in UK and software development team in Taiwan to implement back-end API

Automotive Research & Testing Center   *ChangHua, Taiwan*

RESEARCH COLLABORATION   *June 2018 - Dec. 2018*

- Developed self-locating system for automobile via 3D point cloud (voxel-based map localization) and RTAB-Map (Real-Time Appearance-Based Mapping) which runs on ROS in a RGB-D camera setting

Industrial Technology Research Institute   *HsinChu, Taiwan*

RESEARCH COLLABORATION   *Sept. 2017 - Sept. 2018*

- Developed 3D map reconstruction by deep simultaneous localization and mapping via drone
- Implemented semantic segmentation in 2D and 3D sky for SLAM enhancement (i.e. improved obstacle avoidance and frame rate)

Skills

Programming Languages, Frameworks, Tools

PROGRAMMING LANGUAGES, FRAMEWORKS, TOOLS

- **Programming Languages:** C, C++, Python, GO, shell scripting, JavaScript, HTML, SQL
- **Frameworks and tools::** Git, Flask, Redis, OpenCV, PyTorch, TensorFlow, Scikit-learn, Unity