LI-KANG (TONY) WENG

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EDUCATION

National Taiwan University (NTU) Taipei, Taiwan

Master of Science in Bio-Industrial Mechatronics Engineering (BIME) Sept. 2015

- **Dissertation** Sensor Fusion of Stereo Vision and Radar Systems for Vehicle Safety Application
  Advisor: Dr. Ta-Te Lin

Bachelor of Science in BIME June 2013

- **Topic** Quantitative Evaluation of the Floral Shape Variation in *Sinningia Speciosa* Domestication
  Advisor: Dr. Yan-Fu Kuo

SELECTED PUBLICATIONS

[1] Ta-Te Lin, **Li-Kang Weng** and An-Chih Tsai. 2014. Object Tracking and Collision Avoidance Using Particle Filter and Vector Field Histogram Methods. Paper presented at American Society of Agricultural and Biological Engineers (ASABE) Paper No. 1906189, Montreal, Quebec City, Canada.

[2] Yan-Fu Kuo, **Li-Kang Weng**, Tzu-Kuei Lee, Hao-Chun Hsu, Ta-Te Lin and Chun-Neng Wang. 2013. Quantitative Evaluation of the Floral Shape Variation in Sinningia Speciosa Domestication. Paper presented at ASABE Paper No. 131595052.

RELEVANT PROJECTS AND RESEARCH

Sensor Fusion Project, Biophotonics and Bioimaging Laboratory (BBLab), NTU May 2013-Sept. 2015

- Constructed **sensor fusion based** vehicle safety real-time system capable of obstacle detection, tracking and collision avoidance algorithms using **stereo vision** and **millimeter-wave radar sensor**
- Overhauled algorithms and analyzed the performances to eliminate false detect of algorithm
- Eliminated measurement error of depth information from 2.4% to **0.7%** using fused information
- Enhanced obstacle matched rate from 82.1% to **89.8%** using fused information
- Accelerated **2.8** times in correspondence matching method using CUDA with OpenCV

The 9th Utechzone Machine Vision Prize, Utechzone Inc., Taiwan Feb.-Aug. 2014

- Awarded **2nd prize** of overall competition
- Led fall detection part composed of background removal, feature extraction, object tracking and motion detection algorithms in order to analyze videos under different conditions like light variation

Floral Shape Variation Study, BBLab, NTU Aug. 2012-Feb. 2014

- **Accelerated process speed** and **eliminated measurement error** by developing semi-automatic program with GUI using image processing methods for flower landmark acquisition
- Analyzed shape variation of *Sinningia speciosa* from landmarks identified on 2D images

Advanced Technology Project in Vehicle Safety: Intelligence and Human Factors, ARTC, Taiwan May 2013-Jan. 2014

- Refactored obstacle matching algorithm to optimize performance by speed-up around **30%**
- Eliminated measurement error by optimizing camera calibration on stereo vision
- Analyze **path planning** algorithms to provide more realistic solution
- Designed GUI with concise information for user easy to understand environmental information

The 8th Utechzone Machine Vision Prize, Utechzone Inc., Taiwan Jan.-Aug. 2013

- Implemented new feature of face recognition method with **78%** successful rate

WORK EXPERIENCE

Software Engineer, HTC Corp. Taipei, Taiwan

- Developed real-time **visual-inertial SLAM** algorithm using C++ on ARM platform Jan. 2017-July 2018
- Designed GUI and tools for real-time data visualization and KPI measurement to eliminate tedious labor and quantitate tracking performance

Software Engineer Internship, LEADERG Inc. Taipei, Taiwan

- Participated in the maintenance of Kwang Hwa Information and Culture Center website July-Sept. 2013
- Implemented functions and upgraded UI of voice recognition application named Marsball using Java on Android

TECHNICAL SKILLS

Programming C++, Python, GIT, R, OpenCV, Qt Creator **Sensors** Multi-camera, IMU, Radar, Laser rangefinder

Over Relevant Courses

Udacity Taipei, Taiwan

Nanodegree in Self-Driving Car Engineer Feb. 2018

- **Projects** Vehicle Tracking, Lane Line Detection, Traffic Sign Classification, Driving Behavior Cloning