LI-KANG (TONY) WENG

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EDUCATION

The University of Texas at Dallas — Dallas, USA
Master of Science in Computer Science — Anticipated Graduation: May 2021

Udacity — Taipei, Taiwan
Nanodegree in Self-Driving Car Engineer — Feb. 2018
- **Projects** Vehicle Tracking, Lane Line Detection, Traffic Sign Classification, Driving Behavior Cloning

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 Ku

WORK EXPERIENCE

Research Assistant, National Taiwan University — Taipei, Taiwan
- Built a tracked robot for surveillance on a chicken farm. The information and the manipulation of the robot were visualized on a website and the algorithms are developed using ROS (Robot Operating System) — Mar.-June 2019

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

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 detection 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 the correspondence matching method using CUDA with OpenCV

The 9th Utechzone Machine Vision Prize, Utechzone Inc., Taiwan — Feb.-Aug. 2014
- Awarded **2nd prize** of the overall competition and developed fall detection algorithm including background removal, feature extraction, object tracking, and motion detection under complicated scenarios (light variation, overlap)

Floral Shape Variation Study, BBLab, NTU — Aug. 2012-Feb. 2014
- **Accelerated process speed** and **eliminated measurement error** by developing a 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

TECHNICAL SKILLS

Programming C++, Python, ROS, OpenCV, GIT, JavaScript **Sensors** Multi-camera, IMU, Radar, Laser rangefinder

SELECTED PUBLICATIONS

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.