Yen-Ting **Huang**

VISUAL INFORMATION PROCESSING LAB · RESEARCH ASSISTANT

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Summary

I am a research assistant at the Pervasive AI Research (PAIR) Labs developing an autonomous intelligent control system for drones. My research focuses on UAV computer vision including 3D localization, image restoration, light-weight processing techniques. To solve real-world problems under uncertainty, I aims to incorporate conventional computer vision method and DL-based approaches, and also take advantage of geometric and temperoal information to make the estimation more robust.

Education

National Chengchi University   *Taipei City,Taiwan*

B.S. IN COMPUTER SCIENCE

MATHEMATICAL FINANCE PROGRAM   *2012 - 2016*

BIG DATA ANALYTICAL PROGRAM

Publications

"Real-Time Autonomous UAV Task Navigation using Behavior Tree", International Conference on Intelligent Robots and Systems, Behavior Tree in Robotic Systems Workshop

RU-TAI SOONG, GONG-YI LI, **YEN-TING HUANG**, AND JYI-SHANE LIU   *Sep. 2019*

"Enhancing object detection in the dark using U-Net based restoration module", International Conference on Advanced Video and Signal-based Surveillance (AVSS)

YEN-TING HUANG*, YAN-TSUNG PENG, WEN-HUNG LIAO   *Sep. 2019*

"Monocular Visual Object 3D Localization in Road Scenes", ACM International Conference on Multimedia(ACM MM)[Project Website]

YIZHOU WANG, **YEN-TING HUANG**, JENQ-NENG HWANG   *Oct. 2019*

"UAV System Integration of Real-time Sensing and Flight Task Control for Autonomous Building Inspection Task", International Conference on Technologies and Applications of Artificial Intelligence(TAAI)[Demo Video]

GONG-YI LI, RU-TAI SOONG, JYI-SHANE LIU, **YEN-TING HUANG**   *Nov. 2019*

"Analyzing Social Network Data Using Deep Neural Networks: A Case Study Using Twitter Posts", IEEE International Symposium on Multimedia(ISM)

WEN-HUNG LIAO, **YEN-TING HUANG**, TSU-HSUAN YANG, YI-CHIEH WU,   *Dec. 2019*

"DEEP LEARNING IS ONLY AS GOOD AS ITS DATA? An Investigation Using Heterogeneous Data Sets", submit to ICASSP 2020 conference

WEN-HUNG LIAO, **YEN-TING HUANG**

"Compression of Convolutional Neural Networks based on Kernel Redundancy", submit to Journal of Multimedia Tools and Applications

WEN-HUNG LIAO, **YEN-TING HUANG**, NAI-WEI CHEN

"Accurate Line Following on Vertical Surface with Probability Grid Navigation Model", submit to Journal of Field Robotics

JYI-SHANE LIU, GONG-YI LI, **YEN-TING HUANG**, RU-TAI SOONG

Research Experience

Visual Information Processing Lab in Department of Computer Science, National Chengchi University under Pervasive AI Research (PAIR) Labs (supervised by Prof. Wen-Hung Liao)

Taiwan

RESEARCH ASSISTANT

Sep. 2017 - Present

- Developing an autonomous navigation system based on vision cues that incorporate SLAM self-localization and collision avoidance.
- Building DL-based image restoration algorithms to improve object detection in degraded images such as excessive noise or poor lighting conditions.
- Designing a lightweight and explainable CNN model for real-time inference while running with limited computer hardware resources.
- Managing the Drone team to develop and integrate specific modules composed of motion planning, interface, perception and cognition.

Information Processing Lab (supervised by Prof. Jenq-Neng Hwang)

University of Washington

RESEARCH INTERN

Jan. 2019 - Feb. 2019

- Utilized Orb-Slam 2.0 to locate and establish the space model of the drone in the corresponding environment.
- Integrated depth map and road segmentation, which are generated from MonoDepth and DeepLab respectively, to accurately estimate the ground plane for 3D object localization.

Institute of Information Science, Academia Sinica(supervised by Prof. Mark Liao)

Taiwan

RESEARCH ASSISTANT

Feb. 2016 - June 2016

- Applied structural SVM, which fused visual features and pairwise correlations between people method, into abnormal activity detection for training.

MediaTek Inc.

Taiwan

MULTIMEDIA ALGORITHM DEVELOPMENT INTERN

July 2015 - Sep. 2015

- Collected the gesture dataset with the goal of handling light and pose variances and designed an easy-to-use tool for fast labeling.
- built a hand gesture recognition system via CNN-based approaches.

Viscovery Ltd.

Taiwan

VISION ALGORITHM DEVELOPMENT INTERN

Jan. 2015 - Mar. 2015

- Designed an adaptive segmentation algorithm for credit card digits recognition.
- Trained a robust SVM model based on combining gradient-based features and spatial–temporal features

Visual Information Processing Lab in Department of Computer Science, National Chengchi University(supervised by Pro. Wen-Hung Liao)

Taiwan

RESEARCH ASSISTANT

Jul. 2014 - Jan. 2015

- Applied AR tags with Vuforia for wearable interactive performance platform.

Computer Center in National Chengchi University

Taiwan

MANAGEMENT INFORMATION SYSTEM ENGINEER

Feb. 2014 - June 2015

- Administrated network equipments, softwares, and security systems of NCCU Data Center

Honors & Awards

2019	**5th Place**, ICCV Vision Meets Drones: A Challenge (we won 2nd prize in Mot track 1)	*Seoul, S.Korea*
2019	**3rd Award**, CTCI Foundation - Creative Competition for AI Novice Service	*Taiwan*
2019	**5th Place**, ICIP Competition - Mosquito Breeding Site Hunting for Dengue Fever Control	*Taiwan*
2019	**2nd Award**, The 17th YSRD Award	*Taiwan*
2016	**3rd Award**, 3D Printing Design Challenge, hosted by Industrial Development Bureau, Ministry of Economics Affairs.	*Taiwan*
2015	**College Student Research Scholarship** , NSC	*Taiwan*

Patent

New type of UAV accurate line-following methods for arbitrary line on vertical surface, under review

JYI-SHANE LIU, **YEN-TING HUANG**, GONG-YI LI

Teaching Experience

Department of Computer Science - System Development and Implementation of Drone Intelligence in

TEACHING ASSISTANT

2017 Fall