KUAN-WEI LU

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ABOUT ME

I am a second-year master student in the Department of Electrical Engineering at National Tsing Hua University (NTHU), advised by Prof. Min Sun. I am interested in machine learning and computer vision. Currently, my research interest lays in domain adaptation and semi-supervised learning object detection.

EDUCATION

National Tsing Hua University (NTHU), Hsinchu, Taiwan *July 2020 - June 2022*
Master of Electrical Engineering (EE)
Vision Science Laboratory (VS Lab), advised by Prof. Min Sun

National Chung Hsing University (NCHU), Taichung, Taiwan *September 2016 - June 2020*
Bachelor of Bio-Industrial Mechatronics Engineering (BIME)

SKILLS

Programming: C/C++, Python, Matlab, Git, Linux
Subject: **ML:** Computer Vision, Machine Learning, Deep Learning, Natural Language Processing
Software: Parallel Programming
Framework: Pytorch

PROJECTS

Undergraduate Project *September 2018 - June 2019*
- Proposed an automatic wild bird repellent system based on **Arduino embedded system** to prevent poultry from getting bird influenza.
- By combining **Arduino embedded system**, **motors**, and **laser gun**, the system is enabled to drive the wild birds away.
- The proposed system repels up to **60%** of wild birds **without causing environmental and noise pollution**.
- This project had not only been **accepted as a conference paper** but also **got an award**.

Ongoing projects & master theses *December 2021 - May 2022*
- This project has been submitted to **Neural Information Processing Systems (NeurIPS) 2022.**

- I solve the problem of **domain adaptation** of **real-time object detection** via **semi-supervised learning** (using **Python**).
- Improve the mean average precision (mAP) relatively **120.6%** and **44%** on two different datasets without using any human supervision.

PAPER

Robust 360-8PA: Redesigning The Normalized 8-point Algorithm for 360-FoV Images
Paper accepted by International Conference on Robotics and Automation 2021 (ICRA 2021)
- Proposed a **novel preconditioning strategy** for the 8-point algorithm for estimating an essential matrix for **spherical projection**.

Controllable Laser for Wild Bird Repellent System Based on Arduino Embedded System
Accepted by Conference on Bio-Mechatronics and Agricultural Machinery Engineering 2019
- Undergraduate project

AWARD

College Student Research Scholarship, NSC *2019*
Undergraduate project