

Ching-Yu (George) Tseng

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RESEARCH INTERESTS

Machine Learning, 3D/2D Computer Vision, Autonomous Driving

EDUCATION

NATIONAL TAIWAN UNIVERSITY

Master of Science in **Computer Science and Information Engineering**,

Honors: (GPA: **4.08/4.3**); **2 publications** as **first author**

Advisor: [Winston H. Hsu](#)

Research Topic: Camera-based Perception of Autonomous Driving

NATIONAL TSING HUA UNIVERSITY

Bachelor of Science in **Computer Science**,

Honors: (GPA: **4.03/4.3**); **Rank: top 10%**; **Academic Award: 2017, 2021**.

Advisor: [Shan-Hung Wu](#)

Research Topic: Defense of Adversarial Attack on Image Classification

College Student Research Scholarship, MOST.

SHANGHAI JIAO TONG UNIVERSITY

Visiting Researcher in **Computer Science**,

Advisor: [Hong-Tao Lu](#)

Research Topic: Face Detection and Recognition Embedding System

WORK EXPERIENCE

NATIONAL TAIWAN UNIVERSITY

UNIX System Administrator

- Advisor: [Winston H. Hsu](#)
- **Unix Manager** of Communication & Multimedia Lab, National Taiwan University.

PROFESSIONAL EXPERIENCE & PUBLICATIONS

Revisiting Depth-guided Methods for Monocular 3D Object Detection by Hierarchical Balanced Depth

Yi-Rong Chen, **Ching-Yu Tseng**, Yi-Syuan Liou, Tsung-Han Wu, Winston H. Hsu
[\[under submission\]](#)

CrossDTR: Cross-view and Depth-guided Transformers for 3D Object Detection

Ching-Yu Tseng, Yi-Rong Chen, Hsin-Ying Lee, Tsung-Han Wu, Wen-Chin Chen, Winston H. Hsu [\[paper\]](#) [\[code\]](#) [\[project page\]](#)[\[video\]](#)

3rd Place Solution for NeurIPS 2021 Shifts Challenge: Vehicle Motion Prediction

Ching-Yu Tseng, Po-Shao Lin, Yu-Jia Liou, Kuan-Chih Huang, Winston H. Hsu
[\[paper\]](#)[\[competition\]](#)[\[video\]](#)

Learning from 2D: Contrastive Pixel-to-Point Knowledge Transfer for 3D Pretraining

Yueh-Cheng Liu, Yu-Kai Huang, Hung-Yueh Chiang, Hung-Ting Su, Zhe-Yu Liu, Chin-Tang Chen, **Ching-Yu Tseng**, Winston H. Hsu [\[paper\]](#)

SELECTED PROJECTS

Adversarial Defence and Attack of Image Classification

Honorable Mentioned Project of "Special Project" [Machine Learning, Adversarial Attack]

- Earn a Research scholarship from the **Ministry of Science and Technology**.
- Use the **Segmentation model (UNet, LinkNet)** to generate a mask for the adversarial patch.
- Use generated mask to defend the **adversarial attacks (PGD, BIM, FGSM)**.

Survey and Implementation of Facial Detection and Convolution Neural Network [\[code\]](#) [\[video\]](#)

Taipei, Taiwan

Sep. 2021 - June 2023

Hsinchu, Taiwan

Sep. 2017 - June 2021

Shanghai, China

June 2018 - Aug. 2018

Taipei, Taiwan

Feb. 2022 - Oct. 2022

[CoRL 2023](#)

Jan. 2023 - June. 2023

[IEEE ICRA 2023](#)

Jan. 2022 - June. 2023

[NIPS 2021 Competition](#)

Sep. 2021 - Dec. 2021

Arxiv Citation: 33

Feb. 2021 - June. 2021

Hsinchu, Taiwan

Mar. 2021 - Dec. 2021

Shanghai, China

Final Project when I was a visiting researcher in SJTU [OpenCV, Raspberry Pi, Keras] *June 2018 - Aug. 2018*

- Designed an application **supporting real-time face recognition**. Deployed on the webcam of a laptop and **Raspberry Pi**.
- Utilized **OpenCV for face detection** and CNN architecture (i.e., **FaceNet**) for face feature extraction
- Trained a **Cascade Classifier** on extracted facial features on the self-collected facial dataset.

URcode [[code](#)] [[video](#)] **Hsinchu, Taiwan**
Sep. 2018- Dec. 2018

Honorable Mentioned Project of "Game Programming" [Unity, C#, Blender]

- **Led 4 people** to develop an immersive game with the theme of QRcode in Unity.
- **Design Interact between player and environment.**
- **Cooperate with members** from the **Department of Art** at NTHU,

Arduino Remote Control Tank [[code](#)] [[video](#)] **Hsinchu, Taiwan**
Feb. 2019 - June 2019

Outstanding Final Project of "Embedding System" [C++, Arduino, Embedding System]

- Use a PS2 controller to control the self-develop tank with **Bluetooth**.
- Use an ultrasonic sensor to realize random **autonomous driving**.
- Combine applications from **multi-sensor** (Bluetooth, ultrasonic, light)

Final Explosion [[code](#)] [[website](#)] **Hsinchu, Taiwan**
Sep. 2018- Dec. 2018

Final Project of "Software Design and Studio" [Javascript, Firebase, HTML, CSS]

- Build a clone of **Crazy Arcade** Javascript and store user information with Firebase.
- Build AI mode with random self-defined strategies.

TEACHING EXPERIENCE

[CS241001 Software Design and Studio, Spring 2020, NTHU](#) **Hsinchu, Taiwan**
Feb. 2020 - June 2020

Teaching Assistant

- Teach students to **build personal websites with Javascript, CSS, HTML**.
- Co-designed assignment, exam, and final project, and hosted TA session for **over 70 students**.

HONERS & AWARDS

Third Place, NIPS2021 Competition (2021) **Virtual**
Sep. 2021 - Dec. 2021

- [NeurIPS 2021 Shifts Challenge: Vehicle Motion Prediction](#)

College Student Research Scholarship, Ministry of Science and Technology **Hsinchu, Taiwan**
Mar. 2020 - Dec. 2020

- Research scholarship from the **Ministry of Science and Technology**.

First Place, Kaggle Competition in CS5656 Deep Learning (2020) **Hsinchu, Taiwan**
Sep. 2020 - Dec. 2020

- Deep Learning Competition in Department of Computer Science, National Tsing Hua University [[Task1](#)] [[Task2](#)] [[Task3](#)]

Summer Oversea Experience Scholarship **Shanghai, China**
June 2018 - Aug. 2018

- Exchange program to Shanghai Jiao Tong University for visiting researcher.

ADDITIONAL SKILLS

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- Programming: Python, C/C++, Unity, Javascript, PyTorch, OpenCV, Scikit-learn, LaTeX.
 - Languages: English(fluent, **TOEFL 91/120, TOEIC 815/990**), Chinese(native).