

# Ernie Chu

RESEARCH ASSISTANT

Research Center for Information Technology Innovation, Academia Sinica

✉ shchu@citi.sinica.edu.tw | 🏠 ernestchu.github.io | 📧 ernestchu

## Education

### National Sun Yat-sen University (NSYSU)

B.S. IN COMPUTER SCIENCE AND ENGINEERING

- GPA 4.15/4.3
- Dean's list awards
- NSTC Research Grant for University Students

Kaohsiung, Taiwan

Sept. 2018 - June 2022

## Experiences

### Research Center for Information Technology Innovation, Academia Sinica

RESEARCH ASSISTANT. ADVISOR: JUN-CHENG CHEN

- Video generations using image Diffusion Models
- Generalizable facial video forgery (Deepfake) detection
- Adversarial attacks, generative models, multi-modal reasoning

Taipei, Taiwan

Sept. 2022 - PRESENT

### Office of International Affairs, NSYSU

FULL-STACK WEB DEVELOPER (PART-TIME)

- New online system from scratch for the exchange program
- Maintain all websites under the office
- HTML/JS/CSS, PHP, Vue.js, Express.js, Sequelize.js, MariaDB, MongoDB

Kaohsiung, Taiwan

Sept. 2018 - June 2022

### Northwest Analytics Inc - Taiwan











DATA ENGINEER INTERN

- Data preprocessing for factory monitoring

Kaohsiung, Taiwan

June 2018 - June 2019

## Publications & Preprints

- [1] **Ernie Chu**, Tzuhsuan Huang, Shuo-Yen Lin, and Jun-Cheng Chen. **MeDM: Mediating Image Diffusion Models for Video-to-Video Translation with Temporal Correspondence Guidance**. *AAAI*, 2024.   
- [2] Po-Han Huang, Yue-Hua Han, **Ernie Chu**, Jun-Cheng Chen, and Kai-Lung Hua. **Multi-Task Self-Blended Images for Face Forgery Detection**. *ACM Multimedia Asia*, 2023.  
- [3] **Ernie Chu**, Shuo-Yen Lin, and Jun-Cheng Chen. **Video ControlNet: Towards Temporally Consistent Synthetic-to-Real Video Translation Using Conditional Image Diffusion Models**. *arXiv preprint arXiv:2305.19193*, 2023. 
- [4] Shuo-Yen Lin, **Ernie Chu**, Che-Hsien Lin, Jun-Cheng Chen, and Jia-Ching Wang. **Diffusion to Confusion: Naturalistic Adversarial Patch Generation Based on Diffusion Model for Object Detector**. *arXiv preprint arXiv:2307.08076*, 2023. 
- [5] **Ernie Chu**, Ju-Ting Chen, and Chia-Ping Chen. **Audio Time-Scale Modification with Temporal Compressing Networks**. *arXiv preprint arXiv:2210.17152*, 2022.   

## Professional Services

2023 **Reviewer**, Twelfth International Conference on Learning Representations (ICLR 2024)

Vienna, Austria

2023 **Reviewer**, 18th International Conference on Machine Vision Applications (MVA 2023)

Hamamatsu,

Japan

## Honors

2022 **Honorary Member**, The Phi Tau Phi Scholastic Honor Society of the Republic of China

Taiwan, R.O.C

# Projects



---

## Interactive transcriptor for Taiwanese/R.O.C presidential campaigns in NSYSU

NSYSU, Taiwan

LEADING DEVELOPER

Oct. 2023 - Nov. 2023

- An interactive transcriptor referencing to the source videos of 2024 Taiwanese/R.O.C presidential campaigns in NSYSU
- Helping students digest 1-hour presentation in 10 minutes, reinforcing the democratic resilience in campus  

## LoLViZ.

NSYSU, Taiwan

LEADING DEVELOPER

May 2022 - June 2022

- A 3-stage League of Legends visualizer
- Vue.js, D3.js, Firebase



## NSYSU Captcha Solver

NSYSU, Taiwan

LEADING DEVELOPER

Jan. 2021 - Feb. 2021

- CNN for auto filling the captcha verification
- TensorFlow.js, Chrome extension



## Secure On-line Chatting Service

NSYSU, Taiwan

DEVELOPER & CO-AUTHOR

Spring 2021

- On-line chatting service with console-based UI using ncurses
- Socket programming, multi-threading C++17, attribute-based encryption



## License Plate Verification System

NSYSU, Taiwan

LEADING DEVELOPER

Fall 2020

- ML-based object detector to track and verify the scooter license plate, deployed on Nvidia Jetson Nano  