Ting-Hsuan Chen

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Education

University of Southern California *Aug 2024 – present*
MS in Computer Science

National Chung Hsing University *Sept 2019 – June 2023*
Department of Applied Mathematics (DAM) - Computer Science Group

- Final Average Score: **96.6%**; GPA: **4.27/4.3**
- Graduated as the Top 1 student, achieving the first position in each of the eight semesters
- Admitted as the representative of the College of Science to the Phi Tau Phi Honor Society
- Elected to serve as the Valedictorian; Served as the Class President for four years

Experience

Research Assistant *Los Angeles, United States*
University of Southern California *Aug 2024 – present*

- Joined Prof. Yue Wang's laboratory, engaged in various computer vision research (such as 3D reconstruction, diffusion model, etc.), and participated in industry-academia collaboration with NVIDIA.

Research Assistant *Hsinchu, Taiwan*
National Yang Ming Chiao Tung University *Jan 2024 – June 2024*

- Entered Prof. Yu-Lun Liu's laboratory and led a Google-sponsored industry-academia collaboration project.
- Successfully published a paper as the first author at **NeurIPS 2024** within five months.
- Collaborated on an industry-academia research project with MediaTek, culminating in a completed paper currently under submission for publication.

Full-time R&D Engineer *Taipei, Taiwan*
Foxconn, Hon Hai Precision Industry *Oct 2023 – Dec 2023*

- Developed the company's first patented ECG waveform recognition system within three months, integrating cutting-edge AI, computer vision, and signal processing technologies.
- Responsible for training and mentoring new interns, facilitating their integration and professional development within the company.
- Represented Foxconn in various medical conferences

R&D Engineering Intern *Taipei, Taiwan*
Foxconn, Hon Hai Precision Industry *July 2023 – Sept 2023*

- Developed an AI-automated data cleansing and classification system for the company, enhancing data quality and processing efficiency.
- Engineered and implemented essential APIs using Django and other technologies, meeting the company's specific requirements and improving system integration.

Publications

NaRCan: Natural Refined Canonical Image with Integration of Diffusion Prior for Video Editing *NeurIPS 2024*

- *Ting-Hsuan Chen*, Jiewen Chan, Hau-Shiang Shiu, Shih Han Yen, Changhan Yeh, Yu-Lun Liu
- I am a recipient of the NeurIPS 2024 Scholar Award

DiffIR2VR-Zero: Zero-Shot Video Restoration with Diffusion-based Image Restoration Models *arXiv 2024*

- Changhan Yeh, Chin-Yang Lin, Zhixiang Wang, Chi-Wei Hsiao, *Ting-Hsuan Chen*, Yu-Lun Liu

Projects

B-spline transformer GPU version [GitHub]

- Developed a GPU-Optimized SplineTransformer that accelerates large-scale B-spline basis conversion by over 25x, significantly outperforming traditional CPU-based solutions in speed and efficiency for data processing tasks.
- Tools Used: Python

Zero-Shot Rice Plant Detection System

- Developed a high-performing zero-shot segmentation model for automatic rice plant detection, leveraging CLIPSeg and other cutting-edge AI technologies.
- As an undergraduate, excelled in a graduate-level Computer Vision course, achieving the highest score in the final project.
- Tools Used: Python, PyTorch

MusicWar

- Developed an innovative hybrid of rhythm games and tower defense using C# and Unity, combining rhythmic gameplay with strategic tower defense mechanics.
- Tools Used: C#

Extracurricular activities

Founder and Director   *Taichung, Taiwan*
Information Department, Student Association of DAM, NCHU   *Sept 2022 – June 2023*

- Drafted proposals, applied for funding, and planned departmental courses
- United passionate students in information, collaborated on project development, and gained practical experience collectively

Network Administrator   *Taichung, Taiwan*
Student Association of DAM, NCHU   *Jan 2020 – June 2023*

- Managed network hardware devices and installed, configured, and maintained network-related software
- Quickly addressed network failures and tracked the resolution of issues
- Offered programming tutorials to enhance the professional skills of fellow students

Teaching Assistant   *Taichung, Taiwan*
Department of Applied Mathematics, NCHU   *Sept 2021 – June 2022*

- Assisted in teaching the Statistics and Data Science courses
- Provided additional learning support to fellow students

Skills

Programming: Python, C, Java, MATLAB, JavaScript, C#

Languages: Native in Chinese; Fluent in English