Jhao-Ting (Jack) **Chen**

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Education

M.S. in Electrical and Computer Engineering, Carnegie Mellon University — *Pittsburgh, US*

College of Engineering — *Sep. 2022 - Now*

- Incoming students in 2022 fall semester.

B.S. in Electrical Engineering, National Tsing Hua University — *Hsinchu, Taiwan*

Department of Electrical Engineering — *Sep. 2017 - Jun. 2021*

- Cumulative GPA 3.93/4.3 (3.81/4.0).
- Received academic excellence award, summer study tour scholarship, and academic achievement scholarships.

Work Experience

Microsoft, Software Engineering R&D Intern — *Taipei, Taiwan*

Cloud Hardware Infrastructure Engineering, Reliability Team — *July. 2020 - July. 2021*

- Developed parallel computing scripts for the Microsoft Azure server nodes reliability evaluation.
- Set up software/hardware automation tests for sever health investigation in the Azure data center lab.
- Audited Azure server health log databases and developed real-time responsive dashboards for reliability metrics computation.

Logitech, Picture Analysis & System Development Intern — *Hsinchu, Taiwan*

Color, Material & Finish Team — *Mar. 2020 - Jun. 2020*

- Analyzed pictures of product materials and implemented machine learning in industrial application.
- Developed and systemized experiment workflows and web applications for team-wide usage.
- Designed experiments and verification based on the developed system for product material design.

Research Experience

Artificial Intelligence Image Understanding Lab, Academia Sinica — *Taipei, Taiwan*

Research assistant, Advisor: Prof. Jun-Cheng Chen — *May. 2021 - Feb. 2022*

- Researched face forgery detection, participated in OpenMFC 2020 contest, and deployed deepfake detection to industrial use.
- Exploited image-text relationship and applied on text-guided object and action localization, using CLIP and Grad-CAM.
- Responsible for all experiments and paper writing for an accepted ICASSP paper (joint first author).

Vision Science Lab, National Tsing Hua University — *Hsinchu, Taiwan*

Undergraduate research, Advisor: Prof. Min Sun — *July. 2019 - June. 2020*

- Replaced multi-head attention in ALBERT with locality sensitive hashing. Achieved a better space complexity.
- Code available on jtchen0528/Albert_LSH.

Publications

Jhao-Ting Chen, H.A. Hsia, C.H. Lin, B.H. Kung, D.S. Tan, J.C. Chen, K.L. Hua. *CLIPCAM: A Simple Baseline For Zero-shot Text-guided Object and Action Localization*. **ICASSP 2022**. (Code available on aiiu-lab/CLIPCAM).

Skills

Programming Language	Python, C/C++, JavaScript, PowerShell, Shell scripts
Deep Learning	PyTorch, Tensorflow, Natural Language Processing, Transformers, Model Deployment
Computer Vision	Deepfake Detection, Forgery Detection, Object Detection, Generative Adversarial Networks (GANs)
Web-app Development	Frontend: React, JavaScript, HTML/CSS; Backend: Node.js, Flask, Nginx; Services: AWS, GCP, Firebase

Projects

Unofficial implementation: Learning Self-Consistency for Deepfake Detection

Computer Vision, Face Forgery Detection, Deepfake Detection, Self-supervised Learning *Aug. 2021*

- Implementation of an ICCV 2021 paper proposed by AWS AI.
- Implemented Pair-wise Self-consistency learning for face forgery and deeepfake detection.
- Implemented the Inconsistency Image Generator (I2G) for self-supervise training on unseen deepfake detection.
- Code available on jtchen0528/PCL-I2G.

Doodle Classifier & Generator for Google's QuickDraw! Dataset

Computer Vision, Generative Adversarial Network, Convolutional Neural Network *Jan. 2021*

- Final project of the course: Introduction to Intelligent Computing.
- A Conditional Deep Convolutional Generative Adversarial Network for doodle generation.
- Code available on jtchen0528/QuickDraw-Genenator.

CLIPCAM Demo

Text-guided Object Detection, Zero-shot Object Detection, Flask, Nginx, Web Development *Feb. 2022*

- A web-based demo for my ICASSP 2022 paper, CLIPCAM.
- Deployed the deep learning model on a flask server, hosted with nginx on Raspberry PI.
- Website hosted on jtchen0528/CLIPCAM.

Vision Transformers (ViTs) Experiments

Computer Vision, Vision Transformer *Aug. 2021*

- Simple baseline workflow to train and evaluate some ViT variations: Dino, CvT, Swin-T, MViT.
- Website hosted on jtchen0528/ViT-experiments.

Jack's Blog

Web Development, Firebase, Database, Authentication, GitHub page *June. 2019*

- GitHub page integrated with Google Firebase features: Firestore Database, Realtime Database, Authentication.
- Website hosted on jtchen0528/blog.

Achievements

2021	**Academic Excellence Award,** Top 5 excellent academic score in NTHU EE.	*NTHU*
2017	**Academic Achievement Scholarship,** Top 1 excellent admission score in NTHU.	*NTHU*
2017	**Academic Achievement Scholarship,** Top 5 excellent admission score in NTHU EE	*EE Dept. NTHU*