

# YEN-CHENG CHANG

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## RESEARCH INTERESTS

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Signal & Image Processing, Computer Vision, Machine Learning, Optimization Algorithm, Artificial Intelligence

## EDUCATION

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**University of Michigan-Ann Arbor** Ph.D. in Electrical and Computer Engineering Sep, 2023 - Present

- Pei Lab, Advisor: Prof. Pei Zhang
- Current project: Crowd Monitoring at Michigan Football Stadium  
Utilizing vibration signals to monitor crowd emotions at Michigan Football Stadium, which involves a pre-trained model leveraging YouTube's audio signals to address content label shortages.

**National Taiwan University** M.S. in Electrical Engineering and Computer Science Sep, 2018 - Sep, 2020

- Taiwan Evolutionary Intelligence Laboratory, Advisor: Prof. Tian-Li Yu
- Coursework: Genetic Algorithms, Mathematical Principles of Machine Learning, Convex Optimization Algorithm
- Master's thesis: Verifiability Enhanced Active Learning Using Multi-armed Bandit.  
Proposed a pool-based active learning technique that queries instances using the concept of verifiability, which is defined as the proportion of instances that are correctly classified by all classifiers in the version space.

**National Taipei University** B.S. in Computer Science and Information Engineering Sep, 2014 - Sep, 2018

- Coursework: Algorithm, Linear Algebra, Probability and Statistics, Computer Vision, Data Mining

## EXPERIENCE

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**Machine Learning Researcher** Sep, 2020 - 2023  
Research & Develop team, Deputy Chief Engineer, E.SUN Financial Holding Company *Taipei, Taiwan*

**Artificial Intelligence Researcher, Intern** Jul, 2019 - Sep, 2020  
Intelligence Document Layout team, AI researcher, Cinnamon AI Taiwan Inc. *Taipei, Taiwan*

## PUBLICATION

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**SMILE: Sequence-to-Sequence Domain Adaption with Minimizing Latent Entropy for Text Image Recognition.** Yen-Cheng Chang, Yi-Chang Chen, Yu-Chuan Chang, and Yi-Ren Yeh, ICIP, 2022.

Due to the characteristic of sequential labeling in OCR, we proposed a UDA method with minimizing latent entropy on sequence-to-sequence attention-based models with class-balanced self-paced learning.

**g2pW: A Conditional Weighted Softmax BERT for Polyphone Disambiguation in Mandarin.** Yi-Chang Chen, Yu-Chuan Chang, Yen-Cheng Chang, and Yi-Ren Yeh, INTERSPEECH, 2022.

The proposed method adapts learnable softmax-weights to condition the outputs of BERT with the polyphonic character of interest and its POS tagging to solve the problem of polyphone ambiguity.

**Traditional Chinese Text Recognition Dataset: Synthetic Dataset and Labeled Data.** Yi-Chang Chen, Yu-Chuan Chang, Yen-Cheng Chang, and Yi-Ren Yeh, ICPR Workshop, 2022

This paper presents a framework for a Traditional Chinese synthetic data engine. We generated over 20 million synthetic data and collected over 7,000 manually labeled data TC-STR 7k-word as the benchmark.

## WORKS & HONORS

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- T-Brain AI Competition: AICUP2021 Traditional Chinese scene text recognition, 2nd Place, 2021
- Best Master's Thesis award, National Taiwan University, Department of EECS, 2020
- Developer, working on the AI Document Reader, Cinnamon AI, 2019
- Zhen-Lin Science Education Center Advanced High School Mathematics Class, Teaching Assistant, 2019