

Ting-Chih Chen

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Objective

A full-time research or engineering opportunity that will allow me to use my problem-solving skills and attention to detail to further develop my capabilities in the field of computer science in 2024.

Education

Virginia Polytechnic Institute and State University

M.S. in Computer Science and Applications

Virginia, USA

2022 - Excepted Dec. 2023

- GPA: 3.78/4.0

National Changhua University of Education

B.S. in Computer Science and Information Engineering

Changhua, Taiwan

2017 - 2019

- GPA: 3.4/4.0

Coursework

Graduate & Undergraduate schools

- Mathematics: Linear Algebra, Probability
- Data Science: Data Mining, Data Analytics
- Security: Defending Against ML-powered Adversaries
- Artificial Intelligence: Machine Learning, Deep Learning, Computer Vision, Multimodal Vision

Research Experience

Virginia Polytechnic Institute and State University

Graduate Research Assistant

Virginia, USA

Summer 2022

- Constructed a comprehensive wikiHow instrumental video dataset
- Conducted extensive research on the topic of inductive/abductive reasoning
- Utilized SOTA multi-modal models to analyze and extract valuable insights
- Employed advanced techniques to induce knowledge from LLMs

National Center for High-Performance Computing

Research Internship

Taichung, Taiwan

Summer 2019

- Developed a comprehensive dataset of boat images for research purposes
- Conducted in-depth research on YOLO2, focusing on object detection techniques

University Projects

Heterogeneous Graph Network for MP-Doc VQA

Multimodal Vision

Virginia, USA

Spring 2023

- Processed diverse multimodal data, including word text, OCR bounding box information, and document images
- Constructed both single-modality and multi-modality knowledge graphs to represent the underlying relationships in the data
- Implemented a GNN leveraging T5 to analyze and extract insights from the knowledge graphs

Fine-Grained Image Captioning

Deep Learning

Virginia, USA

Spring 2023

- Implemented an image captioning system using ExpansionNet on the Flickr30K dataset
- Explored and evaluated the performance of different visual embeddings, including ViT and Swin Transformer

Attacking on Disrupting-Deepfakes

Security

Virginia, USA

Fall 2022

- Developed an auto-encoder framework specifically designed to remove perturbations from disrupting deepfakes
- Investigated the transferability of the methodology by evaluating its effectiveness on multiple deepfake models
- Demonstrated that the perturbed images generated by the methodology did not impact the performance of other deepfake models

News Category Prediction

Machine Learning

Virginia, USA

Spring 2022

- Implemented the Naive Bayes with TF-IDF for the task of news category prediction
- Evaluated the performance of the model using metrics such as F1 score, accuracy, and confusion matrix

Skills

Language Programming	Python, Java, C/C++, JavaScript, HTML/CSS, PHP
Scientific Packages	PyTorch, Scikit-learn, Tensorflow, Hugging Face, OpenCV
Platform	AWS

Publications

- Application of LSTM Neural Network in Stock Price Movement Forecasting with Technical Analysis Index IAM2020
Ting-Chih Chen and Chin-I Lee