

Ting-Chih Chen

☎ (908) 381-4759 | ✉ tingchih@vt.edu | 🏠 ting-chih.github.io/ | 🐙 github.com/ting-chih | 🔗 linkedin.com/in/ting-chih-chen

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

- GPA: 3.78/4.0

Virginia, USA

2022 - Excepted Dec. 2023

National Changhua University of Education

B.S. in Computer Science and Information Engineering

- GPA: 3.4/4.0

Changhua, Taiwan

2017 - 2019

Coursework

Graduate & Undergraduate schools

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

Research Experience

Virginia Polytechnic Institute and State University

Graduate Research Assistant

- 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

Virginia, USA

Summer 2022

National Center for High-Performance Computing

Research Internship

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

Taichung, Taiwan

Summer 2019

University Projects

Heterogeneous Graph Network for MP-Doc VQA

Multimodal Vision

- 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

Virginia, USA

Spring 2023

Fine-Grained Image Captioning

Deep Learning

- 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

Virginia, USA

Spring 2023

Attacking on Disrupting-Deepfakes

Security

- 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

Virginia, USA

Fall 2022

News Category Prediction

Machine Learning

- 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

Virginia, USA

Spring 2022

Skills

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|-----------------------------|---|
| 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