Yiming Tang

tangyiming510@gmail.com | +1(949)656-6077

Education

University of Southern California 08/2022 - 05/2024
Master of Science, Computer Science, GPA: 3.7/4.0
Coursework: Machine Learning, Deep Learning, Natural Language Processing, Multi-modality

University of California, Irvine 09/2017 - 12/2021
Bachelor of Science, Computer Science/Business Information Management, GPA: 3.8/4.0
Coursework: Algorithm, Data Management, Game Development, Software Development, Intro to Artificial Intelligence, Computer System, Information Retrieval

Research Experience

Modality-agnostic Fusion for Emotion Recognition with Prof. Mohammad Soleymani at USC 01/2024 - Present
- Designed a parameter-efficient shared encoder for emotion recognition that processes features individually for multi-tasking (classification and reconstruction), achieving comparable performance with fewer parameters.
- Trained **HuBERT**, **MARLIN**, and **BERT** models on audio, face, and text, respectively as unimodal baselines
- Improved emotion recognition performance over unimodal approaches by implementing early, late, and gated fusion across unimodal models

A Unified Model for Multi-Party Social Signal Processing with the GLAMOR Lab at USC 05/2023 - Present
- Developing a unified transformer model for predicting multi-party social signals to improve feeding people with disabilities
- Designed and trained a novel causal masking strategy for a **GPT-2**-based transformer to handle multi-party social signals
- Pretrained social signal encoders (for pose, gaze, etc) to improve the learning efficiency of the transformer
- Improved the loss functions for each signal to optimize various objectives like classification, reconstruction, continuity at once

Sequential Data Analysis with Prof. Pavlos Protopapa at Harvard 09/2020 - 12/2020
- Conducted sentiment analysis, named entity recognition, and machine translation from scratch by constructing models using **TensorFlow** framework, including **RNN**, **LSTM**, **GRU**, encoder-decoder **transformer**, and **GRU** cell.
- Compared the performance on each task with various model architectures by adding attention layers, integrating `distilBERT`, and improving recurrent unit cells.
- Reproduced the results of MultiFiT on efficient multi-lingual language model fine-tuning using TensorFlow

Work Experience

Chongqing Zenith Information Technology Co., Ltd 06/2021 - 07/2021
Full Stack Developer
- Developed a web application for data management using **Spring Boot** for backend and **Javascript, HTML, VUE** for frontend
- Designed and implemented the backend architecture for application via **Spring MVC**
- Created **REST** controllers in **Spring MVC** to handle HTTP requests (GET, PUT, POST, DELETE), facilitating data exchanges and responses to frontend requests
- Integrated **Spring Data JPA** for efficient data handling between **MySQL** and applications

Projects

Prompting with Attention 01/2023 - 05/2023
- Improved zero-shot **RoBERTa** classification performance by using **p-tuning** to derive a base continuous prompt, then ensembling over the logits of prompt variations with an attention layer. Uses less parameters compared to fine-tuning.

AI Text Detection 01/2023 - 05/2023
- Utilized **GPT-2** to generate fake text paired with human-written text, modified the objective function with a triplet loss, and employed **RoBERTa** to achieve over 90% accuracy in distinguishing between human-written and AI-generated text on story topics.

Search Engine Development 04/2020 - 05/2020
- Built a search engine on 50G web page documents that can provide 5 most relevant results within 0.3 seconds

Publications

[1] Humor detection in edited news headlines: predicting humor ratings for news headlines with atomic change
Yiming Tang
International Conference on Electronic Information Engineering and Computer Communication (EIECC 2021)

Skills

Programming Languages: Python, C++, C, Java
Frameworks: numpy, pandas, sklearn, pytorch, pytorch-lightning, tensorflow
Tools: Latex, VSCode