Qifeng Wu

+1 (781) 873 9592 - qfwu123@gmail.com - linkedin.com/in/qfwu/ - github.com/Qifeng-Wu99 - Boston, MA

EDUCATION

Northeastern University **Boston, USA**
MS - Electrical and Computer Engineering, ***GPA: 3.89/4.00*** *Sept 2021 - Dec 2023*
Concentration on Computer Vision, Machine Learning and Algorithms

University of Electronic Science and Technology of China **Chengdu, China**
BEng - Communication Engineering, ***GPA: 3.63/4.00*** *Sept 2017 - Jun 2021*

University of Glasgow **Glasgow, UK**
BEng - Communication Engineering, ***GPA: 17.80/22.00*** *Sept 2017 - Jun 2021*

TECHNICAL SKILLS

Programming Languages: Python, C++, MATLAB, SQL, R
Software: VS Code, Anaconda, MS Office, Blender, Premier Pro, Audition
Operation Systems: Windows, Linux, OS X
Libraries and Tools: PyTorch, Sklearn, Pandas, Numpy, Git, Matplotlib, Gradio, Huggingface Transformers, Accelerate, Open3D, Jupyter Notbook
ML Architectures: CNN(ResNet), Transformers(LLaMA, ViT), Multi-modality Networks(CLIP, BLIP)
Cloud Platforms: AWS(EC2, S3), GCP, Azure, Digital Ocean

WORK EXPERIENCE

Student Researcher
bitHuman Inc, MA, USA *Jun 2023 - Present*
- Led the development of an innovative AI conversational pipeline integrating speech-to-text, LLM fine-tuning, quantization, and text-to-speech with voice cloning
- Employed ChatGPT to augment the training data, introducing a strategic mix of variety and adequate repetition
- Adopted a parameter-efficient method for fine-tuning the LLM, enabling it to provide desirable answers to specific questions while retaining knowledge acquired during pretraining
- Utilized an advanced network quantization technique to efficiently reduce the parameter precision of the LLM, facilitating accelerated inference without compromising interation performance
- Integrated the fine-tuned, quantized LLM, with speech-to-text and text-to-speech modules inclusive of voice cloning capabilities to form a pipeline facilitating interactive 'chat' sessions with a customized LLM

Intern, Data Science
Liberty Mutual Insurance, MA, USA *Jan - Jun 2023*
- Developed a pipeline for text-to-image, image-to-image retrieval by integrating CLIP and FAISS
- Improved the image retrieval performance by extracting critical information from tabular data corresponding to the image set, thereby creating precise image-text pairs for the fine-tuning of the image and text encoders of the CLIP
- Fine-tuned BLIP-2 for better image captioning and visual question-answering performance on a targeted dataset, leveraging the refined model to automate and enhance the efficiency of claim report completion

ACADEMIC PROJECTS

Advancing Semantic Insights with LVLMs in Challenging Vision Tasks
Northeastern University *Oct 2023 - Jan 2024*
- Collaborated in studying the limitation of existing LVM models in challenging vision tasks such as camouflaged object detection and medical image segmentation
- Implemented a training-free framework that employ GPT-4V and CogVLM to provide extra detailed prompt to improve the segmentation performance of SAM in challenging vision tasks
- Paper submitted to ICML 2024, currently under review

Knowledge Distillation from Foundation Model
Northeastern University *May - Sept 2022*
- Adopted the foundation model CLIP to supervise the training of conventional neural networks (Resnets, VGGs) designed for image classification
- Explored properties related to knowledge distillation from foundation model to conventional model
- Submitted a paper summarizing the discovery to ICLR 2023