Qifeng Wu

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EDUCATION

Northeastern University Boston, MA September 2021 – December 2023
Master of Science – Electrical and Computer Engineering, **GPA 3.89/4.00**
With Concentration on Computer vision, Machine Learning and Algorithms

- **Relevant coursework:** Applied Probability and Stochastic Process; Fundamentals of Computer Engineering; Machine Learning and Pattern Recognition; Reinforcement Learning; Database Management Systems; Deep Learning

University of Glasgow & University of Electronic Science and Technology of China September 2017 – June 2021
Joint Program Conducted by UoG and UESTC
Bachelor of Engineering, Communication Engineering, **GPA 3.63 / 4.00**

- **Relevant coursework:** Stochastic Signal Analysis; Information Theory; Communications Circuit Design; Digital Signal Processing; Wireless & Optical Transmission; Mobile Communication; Advanced Digital Communication

SKILLS

- **Programming:** Python, C++, MATLAB, SQL, R
- **Software:** Visual Studio Code, Anaconda, Microsoft Office, Jupyter Notebooks, Git
- **Libraries:** PyTorch, TensorFlow, Keras, Numpy, Matplotlib, Pandas, Gradio
- **Operation Systems:** Linux, Windows
- **Others:** EC2, S3, GCP, Azure

EXPERIENCE

Liberty Mutual Insurance, Boston, MA
Data Scientist January - June 2023

- Developed a pipeline for image-image, text-image retrieval from a dataset by adopting CLIP and FAISS
- Created image-text pairs from given dataset to finetune CLIP in order to improve image retrieval performance
- Set up a pipeline adapting finetuned BLIP-2 (For image captioning and VQA) into claim report completion

ACADEMIC PROJECTS

Large Language Model Customization June - September 2023

- Adopt ChatGPT to generate QA/Conversation dataset according to given background text
- Employ Q-Lora to finetune LLaMA-2 with the generated conversation dataset
- Quantize the finetuned model using AWQ and hence the it can give desired answer to specific questions with less computational resource usage

Knowledge Distillation from Foundation Model May - September 2022

- Adopting a foundation model to supervise the training of models designed for image classification
- Examining the properties related to knowledge distillation from the foundation model
- Paper submitted to ICLR 2023

Task Scheduling in a Mobile Computing Environment November – December 2021

- Summarized the algorithms proposed in "*Energy and Performance-Aware Task Scheduling in a Mobile Cloud Computing Environment*"
- Implemented an algorithm in C++ to schedule tasks based on a given task dependency graph and computation resource requirement table and yielded a schedule with minimized total time consumption
- Optimized the schedule and managed to reduce total energy consumption by 1/3, while keeping total execution time within 1.5 times the minimum without energy consumption limitation

Deformable Convolutional Residual Network for SAR Images Segmentation August 2020 – June 2021

- Developed a model integrating concepts of U-Net, deformable convolution, and residual networks with TensorFlow
- Trained, modified, and tested the model on SAR image dataset MSTAR on Google Colab
- Evaluated and achieved an accuracy of segmentation up to 95%

College Students' Innovative Training Program: 3-D object recognition November 2019 – October 2020

- Designed and constructed a model based on PointNet with TensorFlow and trained the model with ModelNet dataset
- Configured a depth camera for capturing PointCloud data of objects for recognition with a MATLAB program
- Processed data collected by depth camera as model input and obtained a recognition accuracy of 70%