Kaung Myat Kyaw

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EDUCATION

King Mongkut's University of Technology Thonburi, Bangkok, Thailand

3nd Year - Undergraduate, GPAX - 3.87/4

TOEFL iBT

Total Score: 101/120

WORK EXPERIENCE

Automation Test Engineer Intern - Brillar, Yangon *(Mar 2022 - July 2022)*

- Automated test cases for the Monetary Authority of Singapore internal website.
- Reported Defects to the development teams after analyzing the test results.

Summer Research Intern - Innovative Cognitive Computing (IC2), School of Information Technology, KMUTT *(Jun 2023 - Jul 2023)*

- Conducted experiments with Neural Radiance Field (NeRF), Structure-from-motion (SFM), and Multi-view-stereo for Image to 3D Reconstruction
- Hosted the workshop for high school students at Deep Learning and Artificial Intelligence Summer/Winter School (DLAI7)
- Built an automated program that can analyze and fetch the desired information from 800 research papers within 24 hours, using GPT 3.5 Turbo with LangChain.

Summer Research Intern - Innovative Cognitive Computing (IC2), School of Information Technology, KMUTT *(Jun 2024 - Jul 2024)*

- Built a backtesting simulator for quantitative traders
- Designed a framework and integrated a pipeline for generating synthetic multi-speakers conversation audios
- Built a hand gesture controlled car using Raspberry Pi

Teaching Assistant - School of Information Technology, KMUTT *(Augst 2024 - Present)*

- Host weekly mentoring sessions for the students from CSC102 - Introduction to Programming class
- Prepare creating programming quizzes and exercises

PROJECT EXPERIENCE

Speech Act Classification with Graph Attention Networks (In progress)

Developed a Speech Act Classification system to identify the communicative intent of utterances in conversations using the Switchboard Dialogue Act (SwDA) dataset, which contains ground truth labels for each utterance. The system transforms conversations into graph structures, with each node representing an utterance.

- Constructed heterogeneous graphs from conversations with different types of edges.
- Used Graph Attention Networks (GAT) to classify the nodes.

ConversaSynth

A framework to help researchers to generate synthetic multi-speakers conversation audios. Users can define the number of people involved in the conversation, the characteristics of each speaker, the topic of the conversation and the background noises. This project utilizes large language models and text-to-speech models.

- Used Llama3 via Ollama and LangChain for generating dialogues
- Utilized Parler-TTS and XTTS for audio generation and voice cloning

The paper corresponding to this project has been accepted as a short paper at the WI-IAT 2024 Conference.

Quizeo

A Flutter application that automatically generates multiple-choice quizzes for the youtube videos. Users only need to copy/paste the link to the desired youtube video in the application and within a few seconds, the application generates the multiple-choice quizzes together with the solution for the users. This aims to help students/learners to assess their knowledge after watching the educational youtube videos.

- Used YouTubeTranscript API to fetch the transcript of the youtube video
- Integrated Llama2 7B through Ollama to generate the quiz
- Deployed on the our own server using Flask

Climate Change Awareness Robot

This is a robot that moves around and spreads climate change awareness. Upon detecting a person via the camera, the robot will initiate the conversation about climate change which is powered by GPT 4 , Google TTS and Google STT models.

- Applied efficientdet_lite0 model from MediaPipe to classify humans and hand gestures
- Measured the approximate distances of a person from camera location by measuring the size of the bounding box
- Implemented the program on the Raspberry Pi 4 with 4GB RAM

Nominated as IEEE Thailand Section Representative to participate in IEEE Asia Pacific Region 10 Robotics event. The project document paper was accepted at 'the 15th International Conference on Information Technology and Electrical Engineering'.

Automated Research Paper Analyzer

The aim of this project is to automatically download the computer vision related research papers from online websites and analyze which datasets were being used in those papers. This was to conduct research about the popularity of datasets among computer vision researchers.

- Used Selenium to create a bot to download computer vision research papers from the Scopus.com listing.
- Used LangChain to create a pipeline that utilized GPT3.5 Turbo to analyze the downloaded papers and fetch the dataset information from the papers.
- The program was able to analyze ~800 papers within 24 hours.

Storage Management using Computer Vision

A small embedded system, which can be attached to the door of the refrigerator. Before storing inside the fridge, users can scan the items via the camera mounted on the system. The system will classify the item and it calculates the approximated expired date of the item, based on the predefined database. The list of items scanned are displayed on the screen of the system and sorted based on how far the current date from the expired date.

- Created mini convolutional neural network with the architecture inspired from VGG Net

Won the first prize for Asia-Pacific Telecommunity Young Professionals and Students Innovative Project Challenge 2020.

The Polytope Permutation Puzzle

It is a Kaggle competition where we have to solve three types of puzzles with the different sizes for each. The puzzles are Rubik Cube, Wreath (Hungarian Ring), Globe (Masterball). The leaderboard is sorted, based on the total minimum number of moves required to solve all of the puzzles.

- Applied Iterative Deepening A Star (IDA*) algorithm with heuristic function
- Solving the Factorization Problem in Permutation Groups using Minkwitz algorithm

Top 5% of 1054 teams received the silver medal in competition.

Brain Activity Classification

The project idea is to classify the brain activities such as seizure, generalized periodic discharges, lateralized periodic discharges from the EEG and Spectrogram data. This project is currently in progress.

- Using EfficientNetB0 as a base model
- Adding dropout layers and applying regularizations to the base model to handle overfitting
- Experimenting data augmentations to the Spectrogram images to make the model robust

AWARDS

- First runner-up award at ASEAN Data Science Explorers National Final 2024
- Academic Excellence Award, School of Information Technology, KMUTT 2024
- Academic Excellence Award, School of Information Technology, KMUTT 2023
- Silver medal for being in the top 5% in The Polytope Permutation Puzzle 2023
- First prize for Asia-Pacific Telecommunity Young Professionals and Students Innovative Project Challenge 2020
- First runner-up award for AWS Build on Myanmar 2020 HackAThon
- Bronze award for Maker-Idea-Thon 2020
- Champion award for Myanmar STEM Competition 2019 (LegoMindstorms ev3 competition)
- Best Robot Design award for Myanmar STEM Competition 2019 (LegoMindstorms ev3 competition)

AREA OF INTEREST

- Graph Theory
- Natural Language Processing
- Machine Learning
- Database System