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Education

National Taipei University of Technology **September 2019 – June 2023**
Bachelor of Science in Electrical Engineering and Computer Science *Taipei, Taiwan*

- Projects worked on include: **Snake Game using OOP**, **Real-Time Emotion Recognition**, **Minesweeper using Typescript**, **IoT Plant Watering System with GCP and Arduino**, **Manual Lane Detection-Hough Transform**
- Organization: Taipei Tech International Student Association as President of Event Planning
- Valedictorian of the Electrical Engineering and Computer Science Department
- Graduated with GPA of 3.87 / 4.0

Technical Skills

Languages: Python, C/C++, JavaScript, TypeScript, SQL
Developer Tools: VS Code, Google Cloud Platform
Technologies/Frameworks: GitHub, Git, React, PyTorch, Tensorflow, Arduino

Experience

National Taipei University of Technology **September 2022 – January 2023**
Bachelor Research Project Lead *Taipei, Taiwan*

- Supervised by: Professor Chuan-Ming Liu
- Research Topic: **Image Captioning Generator by Combining Architecture of InceptionV3 Transfer Learning Model with Transformers Encoder and Decoder Model (Bachelor's Thesis)**
- Gathered, arranged, and corrected research data to create representative graphs and charts highlighting results for presentations.
- Attended online courses to improve overall knowledge and understanding.
- Worked both independently and collaboratively in a constant fast-paced experimentation environment.
- Performed statistical, qualitative, and quantitative analysis.

Cardinal Blue Software Company (PicCollage) **June 2021 – June 2023**
Quality Assurance Testing Intern *Taipei, Taiwan*

- Designed easy-to-understand testing protocols for distribution to untrained personnel, incorporating corporate standards and regulatory guidelines.
- Escalated issues discovered during QA testing, facilitating rapid resolution by supplying detailed information on fault parameters and replicability.
- Identified and evaluated recurring problems in PicCollage tests, providing detailed documentation of issues for improvements.
- Recommended changes to PicCollage and OnBeat during iterative development, rapidly advance prototyping efforts through continuous improvement.
- Completed in-depth usability testing on Windows, Android and iOS mobile devices.
- Monitored resolution of bugs, tested fixes and helped developers tackle ongoing problems by providing QA perspective.
- Experimenting with Prompt Design on a GAN based application called Stickerize

Play4Fun Co., Ltd. **August 2020 – October 2021**
Localization Tester *Taipei, Taiwan*

- Wrote and executed effective functional tests and carried out exploratory testing to assess product performance.
- Read, interpreted and followed written test instructions and procedures to accurately test products.
- Checked software beyond testing scripts for interconnected problems not covered by established specifications.

Projects

Healthcare Intent Classification with Speech Recognition **October 2023 (WIP)**

- Experimenting with various LLMs such as BERT and fine-tuning it for healthcare purposes.
- Gaining a deeper understanding of how LLMs work, and how applications such as ChatGPT could help change the healthcare area starting from extracting clinical insights from Electronic Health Records (EHRs), medical treatment, classifying various medical problems and early detection using NLP .
- Familiarizing how speech recognition combined with NLP can help with early detection in healthcare for Neurocognitive disorders, such as Parkinson's (PD) or Alzheimer's (AD)

FoodVision **September 2023**

- Understanding the Food101 PyTorch dataset, including its structure, classes, and image samples for the 101 different food categories.
- Explored techniques to augment the dataset, such as rotation, flipping, and zooming, to increase data diversity and improve model generalization.
- Compared different model architectures by their size, speed performance, and time per predictions to choose which architecture suits best for classifying 101 different food classes.

Vision Transformer **August 2023**

- Understood the foundational principles of the Vision Transformer (ViT) architecture.
- How to preprocess image data into sequences of patches, which act as input to the ViT model.
- Learned about self-attention mechanisms and their role in capturing inter-patch relationships.
- Created and incorporated a classification head to predict image labels based on the final embeddings.
- Understood the use of multi-head attention to enhance feature representation.

COVID-19 Detection **June 2023**

- Explored various deep learning architectures, such as convolutional neural networks (CNNs), and their application in image-based medical diagnosis.
- Conducted experiments to fine-tune hyperparameters, such as learning rates, optimizers, and batch sizes, to optimize the model's performance.
- Recognized the potential of deep learning and AI in the medical field for early detection and diagnosis, contributing to improved patient outcomes and healthcare efficiency.
- Acquired knowledge about different pre-trained models (e.g., VGG, ResNet, Inception) and their suitability for transfer learning in the context of COVID-19 detection.

Image-to-Caption Generator (Bachelor's Thesis) **October 2022**

- Tokenized captions to represent them numerically, enabling their usage in the transformer decoder and creating a vocabulary to map words to numerical indices, aiding in language processing.
- Utilized InceptionV3 to extract image features and a transformer based encoder-decoder to generate captions.
- Experimented the training process by defining various loss function and optimizing it using gradient-based optimization algorithms like Adam.

Certifications

Machine Learning: Natural Language Processing (NLP) in Python **Fall 2023 (WIP)**

Udemy *Online*

- Learn in-depth about Vector Models and Text Preprocessing, including Bag of Words model, Count Vectorization, Tokenization, Stopwords, Lemmatization and Stemming
- Gain more insights about Probabilistic models, Markov models and Transformer models

PyTorch for Deep Learning **Fall 2023**

Zero to Mastery - ZTM Academy (Online) *Toronto, Canada*

- Gained a solid understanding of the fundamental concepts and principles of deep learning, including neural networks, activation functions, loss functions, and optimization algorithms.
- Proficiency in using PyTorch, a popular deep learning framework, for building and training neural networks.
- Learned how to design, build, and train deep learning models using PyTorch by replicating, and understanding research papers and state-of-the-art architecture.
- Gained insights into how to apply deep learning in computer vision and natural language processing (NLP) tasks, including image classification, object detection, sentiment analysis, and more.

ChatGPT and Large Language Models (LLMs): A Practical Guide **Fall 2023**

Zero to Mastery - ZTM Academy (Online) *Toronto, Canada*

- Learned about Prompt Engineering and Prompt Design and experiment about how prompting design could affect the outcomes.
- Gained an introduction to machine learning concepts and techniques applied in Large Language Models (LLMs)

International English Language Testing System (IELTS) **Fall 2022**

English Language Certification

- Listening: 8.5—Reading: 8.0—Writing: 6.5—Speaking: 7.0
- Overall: 7.5 — CEFR Level: C1

Test of Chinese as a Foreign Language (TOCFL) **Winter 2020**

Chinese Language Certification

- Listening: B2—Reading: B1
- Overall: B1 (62/80)

Achievements

Chinese Proficient Scholarship **Spring 2021 - Fall 2023**

Academic Scholarship *National Taipei University of Technology*

- Half Tuition Waiver awarded to international students with an average grade over 80 (A) each semester and certificated in Chinese language at an intermediate level.

President's/Dean's List Award **Fall 2019 - Fall 2023**

Academic Awards/Honors *National Taipei University of Technology*

- Awarded 2,500 NTD stipend and certificate to student ranked among the top 5 percent in the department every semester.