Guo Yang

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Education

Trinity College, University of Cambridge

Oct. 2021 - June 2024

BA & MENG | Grade: Class II Division I (Year 2) Ranking 112/319

Year 1 and 2 relevant modules

- Information Engineering covering linear systems and control, signal and data analysis, communications.
- Mathematical methods covering vector calculus, linear algebra, probability.
- Electrical Engineering covering linear circuits and devices, electrical machines, electromagnetic fields and waves, physical principles of electronics, digital circuits and information processing.
- Elective modules: Electrical engineering covering micro and nano-electronic devices; Information engineering covering computer vision, deep learning and Q-learning.

Coursework

• Integrated electrical project where we are required to build a robot to demonstrate the collection, detection and delivery of blocks to a high degree of precision in a structured environment. I constructed the navigation algorithm based on line follower sensors and PID control theory, and designed the object detection algorithm based on low-precision distance sensors and anomaly detection algorithm. We won 3rd place among all teams in final competition.

The University of Hong Kong BENG (Computer Engineering) | Major CGPA 3.92 / 4.30 | CPGA 3.84 / 4.30

Relevant courses

- Calculus and ordinary differential equations (A+)
- Linear algebra, probability and statistics (A+)
- Computer networks (A+)
- Electric circuit theory (A+)
- Discrete mathematics (A)
- Multivariable calculus and partial differential equations (A)
- Signals and linear systems (A)
- Computer programming I (A-)
- Programming technologies (A-)
- Technical English for Electrical and Electronic Engineering (A)

Awards & Programmes

- Dean's Honours List (2019-2020)
- Dean's Honours List (2020-2021)
- HKU-Cambridge Joint Recruitment Scheme (2019-2024)

Chengdu Jiaxiang Foreign Languages School, Chengdu, China Grades

• Chinese Gaokao test 695/750 (Ranking 319th/ 330,000 in Sichuan Province)

Scholarships

Xiping Scholarship: Outstanding Individual; Outstanding team

Experience

Summer Interns

[Incoming] Research Assistant, Department of CST, The University of Cambridge Jun. 2022 – Oct. 2022 This summer, I will collaborate with researchers from the University of Cambridge and Microsoft (US) to investigate the feasibility of fully quantised training on transformers. We will mainly focus on NLP tasks.

Sept. 2019 - Jul. 2021

Sept. 2016 - Jun 2019

Research Assistant, Department of EEE, The University of Hong Kong

Jun. 2021 - Sept 2021

Used Deep Learning method to solve Natural Language Processing tasks:

- Developed web crawler to scrape 10K+ Tweets, Facebook posts and Google search results
- Analyzed and processed data to construct a well-labeled dataset for Deep Learning method.
- Constructed a Deep Learning model to learn from a public dataset and make predictions.
- Achieved high accuracy rate on both testing datasets and custom datasets.

Research Assistant, Department of CS, The University of Hong Kong

Jun. 2020 - Sept. 2020

Learnt the use of Deep Learning method to solve Image Segmentation tasks:

- Constructed a Deep Learning model based on U-net to do retinal vessel segmentation.
- Added histogram matching function to pre-process data, gave a moderate accuracy rate increase.

Challenges & Projects

Citadel Europe Datathon Competition

Mar. 2022

- Performed data engineering: cleaned the data, transformed some data to make them easier to use.
- Made hypothesis about the correlation between the data and did statistical tests to justify them.
- Used some machine learning methods (SVM, Auto Regression, Moving Average etc.) to predict the timeseries trend of the data.

[In progress] Embedded Facial Detection Device Based on Quantised Neural Network Feb. 2022 – Aug. 2022

- Funded by Cambridge University Engineering Department
- Expected to complete the project by Aug. 2022

Team Leader, International Mathematical Modelling Challenge

2017 - 2018

Led team to construct a mathematical model to evaluate the best hospital in a region:

- Assigned different jobs to each team member to increase the efficiency of teamwork.
- Used Analytic Hierarchy Process and Relative Importance Scale to quantify factors of influence
- Defended our thesis with a clear, logical presentation, and won Finalist Award at last.

Extra-curricular

- Activities: Invited speaker on HKU virtual day, Student coordinator of HKU-Cambridge scheme
- Interests: Science-fiction (Interstellar), Japanese Culture (basic user of Japanese), Table tennis

Referees

Professor Hugh Hunt, hemh1@eng.cam.ac.uk, Trinity College, University of Cambridge Professor Edmund Y. Lam, elam@eee.hku.hk, The University of Hong Kong