

TANG Tianhao

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EDUCATION

Hong Kong University of Science and Technology

Kowloon, Hong Kong

Bachelor of Sciences in Computer Science and Mathematics

Sept. 2018 – Present

- Current CGA: 3.997 / 4.3
- Coursework focus: Programming Languages, Deep Learning, Computer Vision, Data Mining, Algorithms

RESEARCH EXPERIENCE

Final Year Project

Sept. 2021 – Present

Supervised by Prof. CHEN Qifeng, CSE, HKUST

Optimize Algorithms for Integer Programming Problems with Graph Neural Networks

- Currently working on developing an efficient (polynomial time) deep-learning-based greedy heuristic framework to solve integer linear programming.

Individual Study

Sept. 2021 – Present

Supervised by Prof. CHAN Shueng-Han Gary, CSE, HKUST

Image to Markup Project

- Currently working on constructing models that can decompose handwritten or complex mathematical formula images to interpretable sequences in better formats and accuracy.

Undergraduate Research Opportunity Program

May 2019 – July 2019

Supervised by Prof. CHAN Shueng-Han Gary, CSE, HKUST

Recognize Dyslexia Using Handwriting from Patients

June 2020 – Aug. 2021

- Constructed deep-learning models to distinguish different symptoms on handwriting data from dyslexia patients.
- Proposed and developed ideas to improve distinguishing tasks through handwriting using the methods of chirality prediction and radical decomposition. Constructed models including transformer, encoder-decoder to achieve the idea and fine-tuned the hyper-parameters and ameliorated the structures for better performance.

Spam User Detection

Sept. 2020 – Dec. 2020

- Trained and fine-tuned a Graph Neural Network (GNN) to deal with data of users and comments in a large-scale graph form. Proposed different sampling methods and training strategies to deal with large scale.
- Proposed several ideas to improve the accuracy, such as trying different embedding methods, using graph attention, and rebuilding a heterogeneous graph for the task.

Indoor Localization Program

July 2019 – Dec. 2019

- Maintained the localization system and test different algorithms on localization tasks.

Course Project of COMP4471: AI in Computer Vision

Sept. 2020 – Dec. 2020

Supervised by Prof. CHEN Qifeng, CSE, HKUST

- Built a deep learning model that can identify digit-alphabet-mixed CAPTCHAs of variable lengths and sizes in a fast and accurate manner.

WORKING EXPERIENCE

Part-time Research Assistant

Sept. 2021 – Present

HKUST CSE Department, in the group supervised by Prof. CHEN Lei

- Currently working on building Bayesian-based models like Tree-Structured Parzen Estimator (TPE) for blackbox hyper-parameter optimization problems.

Student Helper

Jan. 2021 – Feb. 2021

HKUST CSE Department, in the group supervised by Prof. CHEN Qifeng

Facial Recognition System for Campus

- Collected data used for training facial recognition models.
- Experimented and evaluated models to find the best model for classification tasks.

AWARDS

University's Scholarship Scheme for Continuing Undergraduate Students

1st tier, in 2018 and 2019 academic years

Dean's List of School of Engineering

in academic semesters Fall 2018 to Spring 2021