TANG Tianhao

+852 54822791 | ttangae@connect.ust.hk | kelaproth.github.io

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

- Built Bayesian-based models like Tree-Structured Parzen Estimator (TPE) for blackbox hyper-parameter optimization problems in AI competition.
- Currently working on proposing large-scale data and building semi-supervised learning models for classification tasks.

Student Helper　　　　　　　　　　　　　　　　　　　　　　Jan. 2021 – Feb. 2021

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

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

AWARDS AND COMPETETIONS

University's Scholarship Scheme for Continuing Undergraduate Students	*1st tier, 2018, 2019*
Dean's List of School of Engineering	*Fall 2018 - Spring 2021*
ACM CIKM 2021 AnalytiCup, Track 2	*Ranked 10th in final round*