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 for Handwritten

- Currently working on constructing a model that can identify and decompose handwritten images to 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.
- Trained SVM, Random Forest, and other models for performance comparison and evaluation with GNN.

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