

NGUYEN NGOC KHANH

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Singapore
<https://khanh-nguyen-code.github.io>

EDUCATION

BEng Nanyang Technological University, Computer Science May 2021

- Elective Tracks: High-Performance Computing, Artificial Intelligence
- Highest Distinction: Advanced Topics in Algorithms, Compiler Techniques

SCHOLARSHIPS AND AWARDS

Silver Medal in International Physics Olympiad 2015
Rank #51 (262 contestants)
Rank #4 of the Vietnamese team.

Gold Medal in Asian Physics Olympiad 2015
Best theoretical score of the Vietnamese team.
Rank #2 of the Vietnamese team.

Bronze Medal in Asian Physics Olympiad 2014
Rank #6 of the Vietnamese team.

RESEARCH EXPERIENCE

Mentee, Math and Science Summer Program, Online May 2021 to May 2021

Mentor: Nguyen Hoang Phuong

Ph.D. in mathematics at Paul Sabatier (Toulouse, France)

- Led a team of 4 people in the project of discovering dataset Rain in Australia including
 - Scheduled meeting time table
 - Reported to mentor on work progress
- Prepared the final report and presentation on the study including
 - Statistical property of dataset
 - Feature engineering
 - Experiment, Comparison, and Discussion
 - Further Improvement

Data Science Intern, Shopee Singapore Private Limited, Singapore Jan 2021 to May 2021

Anti-Fraud Team, Data Science Department

Reporting Manager: Dr Huang Dong

Project 1: (Jan 2021 to Apr 2021)

- Generated LDBC SNB SF1000 dataset using Spark (~1.5TB)
- Transformed the dataset into suitable format for Nebula 2 using Spark
- Performed benchmark on Nebula 2 with different configurations
- Demonstrated the outperformed capability of Nebula 2 as compare to previous database.

Project 2: (Apr 2021 to May 2021)

- Reviewed Literature in neural-based techniques for Named-Entity Recognition and Word Segmentation.
- Implemented LSTM CRF model for NER task on address data
- Conduct experiment on address data and surpassed the baseline model (CRF) in f1 score performance on test data (0.92 to 0.98).

Research Assistant, Nanyang Technological University, Singapore Dec 2020 to Mar 2021

Singtel Cognitive and Artificial Intelligence Lab
Multi-Agent Path Finding

Advisor: Assoc Prof Tang Xueyan

- Reviewed Literature in Multi-Agent Path Finding (MAPF) and Multi-Travelling Salesman Problem (MTSP).
- Designed and Proved a reduction from the real-world instance to a multi-objective MTSP (mMTSP) instance
- Designed and Implemented a relaxed optimisation algorithm for MTSP inspired by Spectral Clustering.
- Improved the solution by designing and implementing a new local search method for multi-objective optimisation.
- Designed and implemented a conflict-based search algorithm to extract mMTSP solution for real-world requirements.
- Prepared specification documents and presentations for work progress.
- Prepared follow up presentations after handover of work.

Final Year Project, Nanyang Technological University, Singapore
Cluster Analysis on Dynamic Graphs

Feb 2020 to Oct 2020

Supervisor: Asst Prof Ke Yipping, Kelly

- Reviewed Literature in Graph Partitioning, Graph Embedding and Spectral Graph Neural Network.
- Extended and Analysed Gibbs sampling algorithm on Distance-dependent Chinese Restaurant Process (ddCRP) for Graph Clustering Problem
- Conducted intensive experiment for benchmark the performance on power-law cluster size synthesis graphs and real dynamic graphs.
- Surpassed the baseline method of 14.1% in modularity for power-law cluster size synthesis graphs.
- Prepared the specification document and the presentation on the work done.

LANGUAGES

English, Vietnamese

COMPUTER SKILLS

Programming: Python, Go, C++, MATLAB (Basic), Haskell (Basic)

Applications: CLI Applications, JetBrains IDEs, Overleaf (Latex)

Platforms: Linux/Unix, HDFS Spark.

OTHER

Interests/Hobbies: Write, Code, Play (multi-player competitive video games).

REFERENCES

Dr. Yiping Ke, Supervisor
School of Computer Science and Engineering
Nanyang Technological University
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Dr Huang Dong, Manager
Data Science Department
Shopee Singapore Private Limited
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