Nguyen Ngoc Khanh

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# 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

**Data Science Intern**, Shopee Private Limited, Singapore Apr 2021 to Present

Anti-Fraud Team, Data Science Department

**Reporting Manager:** Dr Huang Dong

* 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 optimization algorithm for MTSP inspired by Spectral Clustering.
* Improved the solution by designing and implementing a new local search method for multi-objective optimization.
* Designed and implemented a conflict-based search algorithm to extract mMSTP solution for real-world requirements.
* Prepared specification documents for the work.

**Final Year Project**, Nanyang Technological University, Singapore Feb 2020 to Oct 2020

Cluster Analysis on Dynamic Graphs

**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 specification documents for the work (thesis).

# Languages

**English**: Advanced language

**Vietnamese:** Native language

# Computer skills

**Programming**: Python, Go, C++ (Intermediate), MATLAB (Beginner)

**Applications**: CLI Applications, JetBrains IDEs, Visual Studio Code.

**Platforms**: Linux/Unix, HDFS Spark.

# Other

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

Citizenship: Vietnamese