Huy Quang Duong

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Summary

I have 9-year experience in working in industry as well as in doing research in academia. I am good in Mathematics and in Programming.

Education

Ph.D. Norwegian University of Science and Technology, Norway — 2020 (expected)

M.Sc. Computer Science, Hunan University, China — 2016

B.S. Computer Science, Hanoi University of Technology, Vietnam — 2004

Working Experience

Research Fellow, PhD, NTNU, Norway — 2017 – Present

– Develop novel techniques and efficient algorithms for detecting events in various type of data. Results of this work are several proposed algorithms and papers in top conferences and journals.

– Teaching Assistant (TDT4310-Intelligent Text Analytics and Language Understanding): Give presentation, prepare exercises and solutions, grade solutions (Python).

– Programming Languages: Java, C++, MatLab, Python.

CSC Master Student, Hunan University, China — 2014 – 2016

– Taking Courses (Score 91.94/100): e.g. Algorithm Analysis and Design, Discrete Mathematics, Intelligent Optimization Algorithm, Advanced Artificial Intelligence, Program Language, Advanced Computer Organization, Advanced Data structure and Algorithm.

– Develop kHMC algorithm for mining top-k high utility itemsets (published in Knowledge-Based Systems).

Senior Software Engineer, Military Bank, Vietnam — 2013 – 2014

– Develop enterprise applications (e.g. HR) and business processing management (BPM) (e.g. appraisal process, loan process) using software-AG product, service monitoring tool. Advising and fixing some vulnerabilities and flaws of applications and systems.

– Platform: Web-Based Application & Services.

– Tools and Techniques: Software-AG, SQL-Server, PHP, C-Sharp.

Solution Architect, Team Leader, VTCMobile, Vietnam — 2011 – 2013

– Build Back-End framework and services for applications and games on mobile platform. Analyze and design databases and develop backends, restful services using C-Sharp, SQL-Server, NoSQL-MongoDB, OAuth.

Researcher, CDIT, Vietnam 2006 – 2011

– Propose solutions and develop applications for Vietnam Post.

– Platform: Window & Web Based Applications.

– VB.Net, C-Sharp, SQL-Server, Oracle.

Developer, Vinacomm, Vietnam 2004 – 2006

– Build content management system for news and financial (stock) service system. Build indicator, candle, pattern recognition and rebuild system with new technology, e.g. C-Sharp, NoSQL-Redis.

Outsource, Vingroup, Vietnam 2008 – 2011

– Build HR system, Booking online, Member Management System, Real Estate Management.

– Platform: Window & Web Based Applications, C-Sharp, DevExpress, SQL-Server.

Honors and Awards

1. National award in Mathematics for high school student 1999
2. Full CSC Scholarship for Master degree 2014 – 2016
3. Selected for Best Papers of the Industrial Conference on Data Mining Conference 2016
4. PhD Fellowship 2017–2021
5. SIGIR Student Travel Grant 2019

Research Interest

Data Mining, Algorithm Analysis, Optimization.

Machine Learning and Artificial Intelligent

Event Detection in Tensor and Graph Data.

Programming Languages

Java/JavaScript

– Implemented the algorithms in following papers: MUST, CCPD, IncCHUI, CLS-Miner, ULB-Miner, kHMC, KOSHU algorithms

C/C++/C-Sharp

– Used when working in industry (C-Sharp) and implemented the algorithm in top-rank-k paper, BTK algorithm (C++).

Matlab/Python/CSS/NoSQL

– Matlab is used to implement Sketch paper. Python is used in preprocessing data in MUST and in teaching of TDT4310 (Keras). Python & Torch are used in Probabilistic Artificial Intelligence Summer School.

Publications

1. Dam, T.-L., Ramampiaro, H., Nørvåg, K. & **Duong, Quang-Huy**. Towards efficiently mining closed high utility itemsets from incremental databases. *Knowledge-Based Systems* **165,** 13–29 (2019).
2. **Duong, Quang-Huy**, Ramampiaro, H. & Nørvåg, K. *A Beter Density Guarantee of Dense Subtensor and Dense Subgraph Detection* in *Under Submission* (2019).
3. **Duong, Quang-Huy**, Ramampiaro, H. & Nørvåg, K. *Multiple Dense Subtensor Estimation with High Density Guarantee* in *Under Submission* (2019).
4. **Duong, Quang-Huy**, Ramampiaro, H. & Nørvåg, K. *Sketching Streaming Histogram Elements using Multiple Weighted Factors* in *The 28th ACM International Conference on Information and Knowledge Management, CIKM* (2019).
5. Fournier-Viger, P. *et al.* Discovering Periodic Itemsets Using Novel Periodicity Measures. *Advances in Electrical and Electronic Engineering* **17,** 33–44 (2019).
6. **Duong, Quang-Huy**, Fournier-Viger, P., Ramampiaro, H., Nørvåg, K. & Dam, T.-L. Efficient high utility itemset mining using buffered utility-lists. *Applied Intelligence* **48,** 1859–1877 (2018).
7. **Duong, Quang-Huy**, Ramampiaro, H. & Nørvåg, K. Applying temporal dependence to detect changes in streaming data. *Applied Intelligence* **48,** 4805–4823 (2018).
8. **Duong, Quang-Huy**, Ramampiaro, H., Nørvåg, K., Fournier-Viger, P. & Dam, T.-L. High utility drift detection in quantitative data streams. *Knowledge-Based Systems* **157,** 34–51 (2018).
9. Dam, T.-L., Li, K., Fournier-Viger, P. & **Duong, Quang-Huy**. An efficient algorithm for mining top-k on-shelf high utility itemsets. *Knowledge and Information Systems* **52,** 621–655 (2017).
10. Dam, T.-L., Li, K., Fournier-Viger, P. & **Duong, Quang-Huy**. CLS-Miner: efficient and effective closed high-utility itemset mining. *Frontiers of Computer Science,* 1–25 (2017).
11. Fournier-Viger, P. *et al. PFPM: discovering periodic frequent patterns with novel periodicity measures* in *Proceedings of the 2nd Czech-China Scientific Conference 2016* (2017).
12. Dam, T.-L., Li, K., Fournier-Viger, P. & **Duong, Quang-Huy**. An efficient algorithm for mining top-rank-k frequent patterns. *Applied Intelligence* **45,** 96–111 (2016).
13. **Duong, Quang-Huy**, Liao, B., Fournier-Viger, P. & Dam, T.-L. An efficient algorithm for mining the top-k high utility itemsets, using novel threshold raising and pruning strategies. *Knowledge-Based Systems* **104,** 106–122 (2016).
14. Fournier-Viger, P., Lin, J. C.-W., **Duong, Quang-Huy** & Dam, T.-L. *FHM + : Faster High-Utility Itemset Mining Using Length Upper-Bound Reduction* in *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems* (2016), 115–127.
15. Fournier-Viger, P., Lin, J. C.-W., **Duong, Quang-Huy** & Dam, T.-L. *PHM: mining periodic high-utility itemsets* in *Industrial conference on data mining* (2016), 64–79.

Services

Teaching Assistant

Intelligent Text Analytics and Language Understanding (TDT4310), 2018S, 2019S.

Reviewer

Knowledge-Based Systems

Artificial Intelligence Review

Information Sciences

International Conference on Data Mining (DMIN)

Coursework

DT8116 – Web Mining	2017S
DT8801 – Advance Database Systems	2017S
DT8122 – Probabilistic Artificial Intelligence	2019S

Languages

Vietnamese, English, Chinese (basic), Norwegian (basic)