Huy Quang Duong

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Education

Ph.D. Norwegian University of Science and Technology 2021 (expected)

M.A. Computer Science, Hunan University 2016

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

Employment

Research Fellow, PhD, NTNU, Norway 2017 – Present

– Propose techniques and efficient algorithms for detecting events in various type of data. Results of this work are several proposed algorithms and papers in peer reviewed conferences and journals.

IT specialist, 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, and fixing some vulnerabilities of applications and systems.

IT specialist, 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, NoSQL-MongoDB, OAuth.

Researcher, CDIT, Vietnam 2006 – 2011

– Propose solutions and develop applications for Vietnam Post.

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, g C-Sharp, NoSQL-Redis.

Honors and Awards

1. The national encouragement prize in Math 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

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#

– Used when working in industry and implemented the algorithm in top-rank-k paper.

Matlab/Python/CSS/NoSQL

– Matlab is used to implement Sketch paper. Python is used in preprocessing data in MUST and in teaching of TDT4310.

Publications

Journal and proceedings

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 *Under Submission* (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

Languages

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