# Huy Quang Duong

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Nationality: Vietnamese (Permanent residence in Norway) Source: https://bitbucket.org/duonghuy/

# Summary

I have 10-year experience in working in industry and nearly 4.5 years doing research in academia. I have background in Computer Science, and I am good at Mathematics and at Programming.

### Education

Ph.D. in Computer Science, NTNU, Norway (ongoing defense)

Mar 2017 - Jun 2020

M.Sc. in Computer Science, Hunan University, China

Sep 2014 - Nov 2016

B.S. in Computer Science, Hanoi University of Technology, Vietnam

Sep 1999 - Jun 2004

# Work Experience

#### 2017 - Present

#### Research Fellow, Department of Computer Science, NTNU, Norway.

- I am a member of Data and Artificial Intelligence group, and working in the MUSED (MUlti-Source Event Detection) project at NTNU, Norway. My current work is to develop solutions for working with big data streams in a wide-range of applications, e.g. classification, change detection, fraud detection, network attack detection. I have developed novel foundation and techniques for event detection. The short outcome of my work is summarized as follows:
- **P1.** Optimize the memory usage in mining high profit product groups from customer database by using a summary structure. The method is 6 times lesser memory consumption, and 10 times faster than the existing methods.
- **P2.** Propose an evolving model to quickly adapt with the changes in user activity behaviors. My method is more accurate (4%) in classification task, the error rate is **12** *times better* than the existing methods (CIKM, Rank A).
- **P3.** Develop theoretical foundation for multiple dense subtensor detection with guarantee on the density in tensor data. Propose a new technique to detect *multiple dense subtensors* with a higher density guarantee. The method is *two million times more accurate* on density and *6.9 times faster* (ICDE, Rank  $A^*$ ).
- Techniques (Core): C++, Java, MatLab, Python.

#### 2013 - 2014

### Senior Software Engineer, MB Bank, Vietnam.

- Developed enterprise applications (HR) and business processing management (BPM) (appraisal process, loan process) using software-AG product, Process Maker, service monitoring tool. Advised and fixed vulnerabilities and flaws of applications and systems.
- Platform & Techniques: Web Applications & Windows Services. Software-AG, SQL-Server, .NET, C#.

#### 2011 - 2013

#### Solution Architect, Team Leader, VTCMobile, Vietnam.

– Built Back-End framework, designed and constructed MongoDB system (servers, slaves, log, shading & replicaset) services for applications and games on mobile platform. Analyzed, designed databases and developed backends, restful services using C#, .NET, SQL-Server, NoSQL-MongoDB, OAuth.

Researcher, CDIT, Vietnam.

- Designed solutions and developed applications for Vietnam Post, used in all post offices in all cities and provinces: Telecommunications service management, money transfer service management, parcel and package management, auto-update application.
- Platform & Techniques: Window & Web Based Applications, .NET, C#, SQL-Server, Oracle.

At the same time, I held the position as outsource software engineer for Vingroup, Vietnam.

- Built HR system, Booking online, Member Management System, Real Estate Management.
- Platform: Window & Web Based Applications, C#, .NET, DevExpress, SQL-Server.

#### 2004 - 2006

#### Software Engineer, Vinacomm, Vietnam (VCCorp).

– Built content management system, news and financial (stock) service applications. Built indicator, candle, pattern recognition and rebuilt system with new technology, C#, .NET, MemCache, NoSQL-Redis.

### Honors and Awards

- 1. National award in Mathematics, competition for every high school student.
- 2. **Selected for Best Papers** of the Industrial Conference on Data Mining Conference 2016
- 3. PhD Fellowship, NTNU, Norway

2017-2021

1999

### Skills

- Programming: C#, .NET, Java, C++, Matlab, Python, PHP, Javascript (JQuery), RDBMS (SQL Server, Oracle, MySQL), NoSQL (MongoDB, Redis), Git.
- Data Science: Data Mining (MOA), Machine Learning (scikit-learn, Keras, PyTorch, TensorFlow), SQL (SQL Server, Oracle, MySQL), Pandas, Numpy, Scipy, Matplotlib.
- **Research**: Event Detection, Dense SubTensor Detection, Dense Subgraph Detection, Network Analysis, Pattern Mining, Sketching, Optimization, Data Mining and Knowledge Discovery, Statistical Analysis.
- **Tools**: Visual Studio, Eclipse, RStudio, Jira, Mantis Bug Tracker, Mind Manager, Ext.Net, DevExpress, PyCharm, CodeSmith Generator.

# **Publications**

- 14 peer-reviewed scientific articles, 194 citations, h-index 8.
- For more details, please see my Google Scholar: https://scholar.google.com/

# Languages

Vietnamese (native), English (fluent), Norwegian (Studying Level 2 at NTNU), Chinese (basic).

## References

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