

Huy Quang Duong

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Experienced Software Engineer | Ph.D. in Computer Science (NTNU)

Results-driven software engineer with **21+ years** of experience (**16+ years** in industry, **5+ years** in academia) and skilled in building business-critical and scientific solutions using modern technologies and advanced algorithms. Proficient in C#, Java, Kotlin, React, Python, JavaScript, and advanced with SQL Server, Oracle, MongoDB, PostGre, OAuth2, and Messaging Queues. Recognized for impactful scientific contributions with **16 peer-reviewed publications** and over **725 citations**.

Education

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| 1. Ph.D. in Computer Science | NTNU, Trondheim, Norway | 2017 - 2020 |
| Thesis: "Event Detection in Changing and Evolving Environments" - MUSED project (Multi-Source Event Detection) | | |
| 2. M.Sc. in Computer Science | Hunan University, China | 2014 - 2016 |
| 3. B.S. in Computer Science | Hanoi University of Technology, Vietnam | 1999 - 2004 |

Side project

1. **Real Estate System with AI - Founder** <https://www.looking.no>
 - <https://www.looking.no>, an **AI-powered** real estate analytics platform that analyzes property listings and images for sentiment, floor plans, and pricing using state-of-the-art AI models and a modern web technology.
 - Use **React Frontend, Python Backend, and Postgres Database + Websocket + Image & Text analysis and AI, Hugging Face, Alloma, Mistral, Matplotlib, Github, Railway CI/CD, Docker.**

Work Experience

1. **Elhub AS (c/o Statnett SF), Oslo, Norway - Senior Advisor** **Jun 2022 - Present**
 - Actor registration system in energy sector in Nordic countries (Norway & Sweden), enabling communication and message verification. Continuously introduced new features to meet evolving business needs. Redesigned the architecture to significantly improve system quality. Fixed security flaws. Led performance optimization and security hardening, improved system performance by **100x**. Implemented multi-factor authentication. Set up Grafana dashboards and metrics. Led the work to migrate systems from On-prem to OCI cloud, etc. Setup all CI/CD pipelines. Led migrating and rewriting system in React & Kotlin.
 - Use **Kotlin (Ktor), React, PostGre, Microservices, OAuth2, GitOps (Helm, ArgoCD), SQL-Server, C#, Grafana, NServiceBus, Ansible, Github, Teamcity, OCI cloud.**
2. **Stingray Marine Solutions AS, Oslo, Norway - Senior Software Developer** **Dec 2020 - May 2022**
 - Architected and developed the following systems: Navigator Backend, Command Gateway, Simulator, Favorite Scheduler, Frontend for routing commands between nodes and users and for controlling power.
 - Used tech stacks: **RestApi, NetCore, C#, MongoDB, OAuth2, Message Queue, React+Redux+Typescript, Razor, SignalR, Python, Microservices, Raspberry pi, Gitlab, CI/CD, AWS cloud, Docker.**
3. **Department of Computer Science, NTNU, Trondheim, Norway - PhD Research Fellow** **Mar 2017 - Nov 2020**

- Developed solutions and theoretical foundations for event detection (changes, anomalies, fraud and network attack), novel algorithm for multiple dense subtensor and subgraph detection, improved accuracy on density **two million** times and **6.9 times** faster. Research published in top venues (**A*** conferences). Ph.D. research in data mining and machine learning was recognized for its high quality, ranked in the **top quartile**, and compares favorably with PhD theses from **Harvard, USA**. For more details, please check Google Scholar page. Use **Java, Matlab, Python, Tensorflow, Pytorch, Numpy, Pandas, Matplotlib**.

- Military Bank, Hanoi, Vietnam - Senior Software Engineer** **2013 - 2014**
 - Led 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. Used web & windows services, **Software-AG, SQL-Server, .NET, C#**.
- VTCMobile, Hanoi, Vietnam - Solution Architect, Team Leader** **2011 - 2013**
 - Architected and built Backend framework, designed and constructed MongoDB system (servers, slaves, log, sharding & replicaset) services for applications and games on mobile platform. Analyzed, designed databases and developed backend, restful services using **C#, .NET, SQL-Server, NoSQL-MongoDB, OAuth2**.
- CDIT, Center for Development of Information Technology, Hanoi, Vietnam - Researcher** **2006 - 2011**
 - 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. Used **.NET, C#, SQL-Server, Oracle**.

At the same time, also worked as an outsourced software engineer for Vingroup, Vietnam (2006-2010). Built HR system, Booking online, Member Management System, Real Estate Management.
- Vinacomm (VCCorp), Hanoi, Vietnam - Software Engineer** **2004 - 2006**
 - Built content management system, news, financial (stock) service applications. Built indicator, candle, pattern recognition and rebuilt system with new technology, using **C#, .NET, SQL-Server, Dist-Cache, NoSQL-Redis**.

Honors and Awards

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| 1. Security Rewards | <i>PII report at bugs.chromium.org (Google) ...</i> | 2023 |
| 2. SIGIR Conference Travel Grant | <i>For paper presentation at leading CIKM conference</i> | 2019 |
| 3. Selected for Best Papers | <i>The Industrial Conference on Data Mining Conference</i> | 2016 |
| 4. Potential Employee of the Year Award | <i>Military Bank (MBBank, ~6.9K employees)</i> | 2014 |
| 5. National award in Mathematics | <i>For senior high school students</i> | 1999 |

Skills

- Programming:** C#, .NetCore, Java, Kotlin, C++, Matlab, Python, JavaScript, React + Redux, TypeScript, SQL/NoSQL.
- Data Science:** Data Mining (MOA), Machine Learning (Scikit-learn, Keras, PyTorch, TensorFlow), SQL DB (SQL Server, Oracle, MySQL), NoSQL DB (MongoDB, Redis), Pandas, Numpy, Scipy, Matplotlib, Git.
- Tools:** VS Studio(+Code), Eclipse, Bug Tracker, Docker, Mind Manager, Ext.Net, DevExpress, PyCharm, Code-Smith, Teamcity, Grafana.

Languages

- Vietnamese (Native), English (Fluent), Norwegian (Level 2 at NTNU ~ B1/B2 CEFR), Chinese (Basic).