

Duc M. Le

SOFTWARE ENGINEER · SOFTWARE ARCHITECTURE RESEARCHER · SOFTWARE REPOSITORY MINER

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Summary

Blends research experience in Software Engineering field with diverse and practical trainings in the software industries of Vietnam, S.Korea and U.S. to offer solid skills in software design and development. Experiences include (1) mining software repositories/big data, (2) developing cloud-based applications and web services, (3) architecture design, recovery, and analysis, (4) software product line engineering.

Education

University of Southern California (USC)

Los Angeles, U.S.

PHD IN COMPUTER SCIENCE, SOFTWARE ARCHITECTURE RESEARCH GROUP (SOFTARCH)

2013 - PRESENT

• Advisor: Prof. Nenad Medvidović

GPA : 3.87/4.00

Pohang University of Science and Technology (POSTECH)

Pohang, S.Korea

MSC IN INFORMATION TECHNOLOGY CONVERGENCE ENGINEERING, SOFTWARE ENGINEERING LAB (SELAB)

2010 - 2012

• Advisor: Prof. Kyo Chul Kang

GPA : 95.9/100.0

Hanoi University of Science and Technology (HUST)

Hanoi, Vietnam

BSC IN INFORMATION TECHNOLOGY (MAGNA CUM LAUDE)

2005 - 2010

• Advisors: Assoc. Prof. Huynh Quyet Thang (HUST), Dr. Martin Nordio (ETH Zurich)

GPA: 8.07/10.00

Skills

Programming Java, C/C++, Linux Shell, Scala, Python, HTML, PHP, JavaScript

Frameworks Spark, Hadoop, Spring, OSGi, EMF, GWT, jQuery, Joomla, Liferay, Microsoft Azure, Amazon EC2

Databases MySQL, MongoDB, Cassandra

Others Agile Development, iPython, \LaTeX , SVN, Git, Asterisk PBX

Work Experience

NEC Laboratories America, Inc.

Princeton, New Jersey, U.S.

RESEARCH INTERN

May. 2017 - Aug. 2017

Veritas Technologies LLC

Culver, California, U.S.

SOFTWARE ENGINEERING INTERN

May. 2016 - Aug. 2016

- Worked for the Platform team on EV.Cloud project
- Applied topic modeling and machine learning techniques to intelligently suggest retention policies for customers' emails
- Implemented and verified the proposed approach on Enron dataset using Spark, Hadoop, Cassandra, and Spring Framework
- Was selected to present at VERITAS Cutting Edge 2016

Samsung Research America

Irvine, California, U.S.

RESEARCH INTERN

Jun. 2015 - Sep. 2015

- Worked for the Advanced Printing Software Lab
- Completed the end-to-end scenario of extracting UP (Unified Interfaces of Samsung Printers) variability information from an actual MFP (Multi-Functions Printers), representing this in a UP variability model, editing this information, and using it to configure a running simulator instance.
- This involved design and implementation using different technologies: OSGi, EMF, Eclipse plug-ins, REST-ful webservices, UI development.

Dasan Handysoft

Seoul, S.Korea

SOFTWARE ENGINEER

Sep. 2012 - Jun. 2013

- Designed the server architecture of HandyUC 5.0, a platform providing various types of communication to enterprises, including email, instant messaging, and video conferencing.
- Implemented communication protocols of HandyUC, including XMPP protocol, Handysoft's legacy protocol, and a Http-based protocol.

HDC Media

Hanoi, Vietnam

PHP DEVELOPER & ASTERISK PBX ADMINISTRATOR

Aug. 2009 - Jun. 2010

- Developed a movie website based on Joomla platform to provide video contents to customers.
- Maintained and adapted Asterisk PBX system of the company to meet the company's requirements.

Honors & Awards

2016	'Thesis in Three' - Best Presentation Award , Doctoral Symposium, ICSE 2016	Austin, TX, USA
2015	Awardee , ACM SigSoft CAPS Travel Support for attending ICSE 2015	Florence, Italy
2014	Awardee , USC Doctoral Student Summer Institute Award	Los Angeles, CA, U.S.
2013	Awardee , Vietnam Education Foundation Fellowship	U.S.
2011	Best Poster Prize , 3rd International Symposium on IT Convergence Engineering	Pohang, S.Korea
2010	Awardee , Research Scholarship from National Research Foundation of Korea	Pohang, S. Korea
2010	Awardee , Certificate of Merit for Excellent Graduation Achievement	Hanoi, Vietnam

Research Experience

Automated Support for Adapting Hardware to Changes in the Architecture of Android

Los Angeles, U.S.

SOFTWARE ARCHITECTURAL RESEARCH GROUP, USC

Dec. 2016 - PRESENT

- Cooperate with a phone-making company to study how to adapt the company's hardware to architectural changes in new versions of Android.

Architectural Change and Decay in Open-source Software

Los Angeles, U.S.

SOFTWARE ARCHITECTURAL RESEARCH GROUP, USC

Feb. 2014 - PRESENT

- Reversed architectures of over 800 versions of 23 open-source systems, totaling over 120 MLOCs.
- Found evolution trends related to architectural changes in software systems, rate of architectural decay occurrences, correlations among implementation decisions and architectural changes.
- Use implicit problems, e.g., architectural- and code-smells, in combination with explicit problems, e.g. reported issues and bugs, to provide an accurate, systematic and in depth approach to predict potential system problems, particularly bugs.

Privacy Preserving in Distributed Computation

Los Angeles, U.S.

SOFTWARE ARCHITECTURAL RESEARCH GROUP, USC

May. 2014 - Aug. 2014

- Studied sTile, a tile-based architecture, which tackles the problem of distributing computation onto cloud, while providing probabilistic guarantees that agents compromising parts of the cloud wouldn't be able to learn the private data and the nature of the computation.
- Deployed and evaluated a prototype of sTile on several main cloud services (Azure, EC2, Google Cloud).

Impact Analysis of Software Requirement Change based on Feature Relationships

Pohang, S.Korea

SOFTWARE ENGINEERING LAB, POSTECH

Sep. 2012 - Feb. 2013

- Reversed feature models based on variation points and variants embedded by C preprocessor.
- Verified consistency between designed models and reversed models and provided refactoring advice.
- Integrated into VULCAL Workbench, a CASE tool that supports software product line engineering.

CloudStudio - Enabling distributed projects to produce software "on the cloud"

Hanoi, Vietnam

ETH ZURICH & HUST

Aug. 2009 - Jun. 2010

- Created the initial version of CloudStudio, an Integrated Development Environment (IDE) enabling globally distributed software projects and producing software "on the cloud".
- Developed the following features: project management, code editor, project compilation, group communication.

Publications

A Large-Scale Study of Architectural Evolution in Open-Source Software Systems

U.S.

POOYAN BEHNAMGHADER*, **Duc M. Le***, JOSHUA GARCIA, DANIEL LINK, ARMAN SHAHBAZIAN, NENAD MEDVIDOVIC

Nov. 2016

- Empirical Software Engineering (EMSE) Journal

Architectural-Based Speculative Analysis to Predict Bugs in a Software System

Austin, U.S.

Duc M. Le

May. 2016

- Proceeding of the 38th International Conference on Software Engineering (ICSE), Doctoral Symposium track

Relating Architectural Decay and Sustainability of Software Systems

Venice, Italy

Duc M. Le, CARLOS CARRILLO, RAFAEL CAPILLA, NENAD MEDVIDOVIC

Apr. 2016

- Proceeding of the 13th Working IEEE/IFIP Conference on Software Architecture (WICSA)

An Empirical Study of Architectural Change in Open-Source Software Systems

Florence, Italy

Duc M. Le, POOYAN BEHNAMGHADER, JOSHUA GARCIA, DANIEL LINK, ARMAN SHAHBAZIAN, NENAD MEDVIDOVIC

May. 2015

- Proceeding of the 12th Working Conference on Mining Software Repositories (MSR)

Validating consistency between feature model and its implementation

Pisa, Italy

Duc M. Le, LEE HYESUN, KYO C. KANG, KEUN LEE

Jun. 2013

- Proceeding of the 13th International Conference on Software Reuse (ICSR)