Phuong Thanh Nguyen

Personal information

Name:	Phuong Thanh NGUYEN
Gender:	Male
Position:	Tenure-track Assistant Professor (RTD/b), University of L'Aquila
email:	phuong.nguyen@univaq.it

Education

12/2009 – 09/2012	Doctorate degree, Dr.-Ing. Friedrich-Schiller-Universität Jena (Germany)
09/2002 – 02/2005	Master of Information Technology Hanoi University of Science and Technology (Vietnam)
09/1997 – 05/2002	Diploma in Information Technology Hanoi University of Science and Technology (Vietnam)

Habilitation

In July 2023, I obtained the Italian habilitation (Abilitazione Scientifica Nazionale, ASN 2021 Quinto Quadrimestre) as Associate Professor for the following two independent sectors:

- Computer Science (01/B1: Informatica, II fascia).[1]
- Computer Engineering (09/H1: Sistemi di Elaborazione delle Informazioni, II fascia).[2]

Research interests

- **Mining Software Repositories**. Open-source software (OSS) forges, such as GitHub or Maven, offer many software projects that deliver stable and well-documented products. Most OSS forges typically sustain vibrant user and expert communities which in turn provide decent support, both for answering user questions and repairing reported software bugs. Moreover, OSS platforms are also an essential source of consultation for developers in their daily development tasks. We have conceptualized techniques and tools to assist developers in their programming tasks.
- **Recommender Systems**. In online shopping platforms, recommender systems are considered to be an indispensable component, allowing business owners to offer personalized products to customers. The development of such systems has culminated in well-defined recommendation algorithms, which in turn prove their usefulness in other fields, such as entertainment industry, or employment-oriented service. Recommender systems in software engineering (RSSE) have been conceptualized on a comparable basis, i.e., they assist developers in navigating large information spaces and getting instant recommendations that are helpful to solve a particular development task. In this sense, RSSE provide developers with useful recommendations, which may consist of different items, such as code examples, topics, third-party components, documentation, to name a few.

Editorial activities

- Associate Editor of Springer Applied Intelligence (https://www.springer.com/journal/10489/editors).
- Member of the Editorial Board of the Software Quality Journal (https://www.springer.com/journal/11219/editors).

[1] Settore Concorsuale 01/B1 - II Fascia - Quinto Quadrimestre: https://bit.ly/45fVov8
[2] Settore Concorsuale 09/H1 - II Fascia - Quinto Quadrimestre: https://bit.ly/47DMZ6g

- Member of the Editorial Board of the Journal of Universal Computer Science (https://bit.ly/3RFhtvB).
- Member of the Editorial Board of Elsevier Computers & Education: Artificial Intelligence (https://bit.ly/3fMckVi).

Honours and Awards

Awards

- "***2022 SoSyM First Paper Award***": Juri Di Rocco, Davide Di Ruscio, Claudio Di Sipio, Phuong T. Nguyen, Alfonso Pierantonio, "*MemoRec: A Recommender System for Assisting Modelers in Specifying Metamodels*," Springer Software and Systems Modeling (SoSyM), DOI: 10.1007/s10270-022-00994-2.
- "***Best Foundation Paper Award***": Juri Di Rocco, Claudio Di Sipio, Davide Di Ruscio, Phuong T. Nguyen, "*A GNN-based Recommender System to Assist the Specification of Metamodels and Models*," DOI: 10.1109/MODELS50736.2021.00016 awarded by the Program Board of the 24th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems, MODELS 2021.
- "***Best Paper Award Winners for 2020***": Phuong T. Nguyen, Juri Di Rocco, Davide Di Ruscio, Massimiliano Di Penta "*CrossRec: Supporting Software Developers by Recommending Third-party Libraries*," Elsevier Journal of Systems and Software, 2020, ISSN: 0164-1212, DOI: 10.1016/j.jss.2019.110460, (https://bit.ly/3bZi5cx).
- "***Diamond Best Paper Award***": Phuong T. Nguyen, Juri Di Rocco, Davide Di Ruscio, Massimiliano Di Penta "*CrossRec: Supporting Software Developers by Recommending Third-party Libraries*," Elsevier Journal of Systems and Software, 2020, ISSN: 0164-1212, DOI: 10.1016/j.jss.2019.110460, (https://bit.ly/3bZi5cx).
- "***Best Paper Award***": Phuong T. Nguyen, Juri Di Rocco, Davide Di Ruscio, Alfonso Pierantonio, Ludovico Iovino, "*Automated Classification of Metamodel Repositories: A Machine Learning Approach*," DOI: 10.1109/MODELS.2019.00011, awarded by the Program Board of the 22nd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems, MODELS 2019.
- "***Distinguished paper***": Phuong T. Nguyen, Juri Di Rocco, Riccardo Rubei, Davide Di Ruscio, "*CrossSim: exploiting mutual relationships to detect similar OSS projects*," in Proceedings of the 44th Euromicro Conference on Software Engineering and Advanced Applications, SEAA 2018, DOI: 10.1109/SEAA.2018.00069, (https://bit.ly/3hrPMr1).
- "***Best Paper Award***": Phuong T. Nguyen, Hong Anh Le, Thomas Zinner "*A Context-Aware Traffic Engineering Model for Software-Defined Networks*," DOI: 10.1007/978-3-319-15392-6_8, awarded by the Program Board of the 2nd International Conference on Nature of Computation and Communication, ICTCC 2014.

10 Most Important Publications

[1] Phuong T. Nguyen, Claudio Di Sipio, Juri Di Rocco, Riccardo Rubei, Davide Di Ruscio, Massimiliano Di Penta "*Fitting Missing API Puzzles with Machine Translation Techniques*," Elsevier Expert Systems with Applications (ESWA), 2023, ISSN: 0957-4174, DOI: 10.1016/j.eswa.2022.119477.

[2] Phuong T. Nguyen, Juri Di Rocco, Riccardo Rubei, Claudio Di Sipio, Davide Di Ruscio, "*DeepLib: Machine Translation Techniques to Recommend Upgrades for Third-party Libraries*," Elsevier Expert Systems with Applications (ESWA), 2022, ISSN: 0957-4174, DOI: 10.1016/j.eswa.2022.117267.

[3] Phuong T. Nguyen, Juri Di Rocco, Claudio Di Sipio, Davide Di Ruscio, Massimiliano Di Penta "*Recommending API Function Calls and Code Snippets to Support Software Development*," IEEE Transactions on Software Engineering (TSE), 2021, ISSN: 1939-3520, DOI: 10.1109/TSE.2021.3059907.

[4] Phuong T. Nguyen, Davide Di Ruscio, Alfonso Pierantonio, Juri Di Rocco, Ludovico Iovino, "*Convolutional neural networks for enhanced classification mechanisms of metamodels*," Elsevier Journal of Systems and Software (JSS), 2020, ISSN: 0164-1212, DOI: 10.1016/j.jss.2020.110860.

[5] Phuong T. Nguyen, Juri Di Rocco, Davide Di Ruscio, Massimiliano Di Penta, "*CrossRec: Supporting Software Developers by Recommending Third-party Libraries*," Elsevier Journal of Systems and Software (JSS), 2020, ISSN: 0164-1212, DOI: 10.1016/j.jss.2019.110460.

[6] Phuong T. Nguyen, Juri Di Rocco, Riccardo Rubei, Davide Di Ruscio, "*An Automated Approach to Assess the Similarity of GitHub Repositories*," Springer Software Quality Journal (SQJ), Vol 28, pages 595–631, 2020, ISSN: 0963-9314, DOI: 10.1007/s11219-019-09483-0.

[7] Phuong T. Nguyen, Riccardo Rubei, Juri Di Rocco, Claudio Di Sipio, Davide Di Ruscio, Massimiliano Di Penta, "*Dealing with Popularity Bias in Recommender Systems for Third-party Libraries: How far Are We?*," in Proceedings of the 20th International Conference on Mining Software Repositories, MSR 2023, DOI: 10.1109/MSR59073.2023.00016.

[8] Phuong T. Nguyen, Juri Di Rocco, Claudio Di Sipio, Davide Di Ruscio, Massimiliano Di Penta, "*Adversarial Attacks to API Recommender Systems: Time to Wake Up and Smell the Coffee?*," in Proceedings of the 36th IEEE/ACM International Conference on Automated Software Engineering, ASE 2021, DOI: 10.1109/ASE51524.2021.9678946.

[9] Phuong T. Nguyen, Juri Di Rocco, Claudio Di Sipio, Davide Di Ruscio, Massimiliano Di Penta, "*Adversarial Machine Learning: On the Resilience of Third-party Library Recommender Systems*," in Proceedings of the 25th International Conference on Evaluation and Assessment in Software Engineering, EASE 2021, DOI: 10.1145/3463274.3463809.

[10] Phuong T. Nguyen, Juri Di Rocco, Davide Di Ruscio, Lina Ochoa, Thomas Degueule, Massimiliano Di Penta, "*FOCUS: A Recommender System for Mining API Function Calls and Usage Patterns*," in Proceedings of the 41st International Conference on Software Engineering, ICSE 2019, ISBN: 978-1-7281-0869-8, DOI: 10.1109/ICSE.2019.00109.

L'Aquila, December 18th 2023

Phuong T. Nguyen