

Naeem Esfahani

Senior Software Engineer
Google LLC

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EDUCATION

- **George Mason University**
Ph.D. in Computer Science 2008 - 2014
 - Thesis: “Management of Uncertainty in Self-Adaptive Software”
 - Advisor: Dr. Malek
- **Sharif University of Technology**
M.Sc. in Computer Engineering 2005 - 2008
 - Thesis: “Introducing a set of process patterns for development of real-time software”
 - Advisor: Dr. Mirian-Hosseinabadi
- **University of Tehran**
B.Sc. in Electrical and Computer Engineering 2001 - 2005
 - Final Project: “UT-Plag, A System to find plagiarism in a collection of texts”
 - Advisor: Dr. Sirjani

WORK EXPERIENCE

- **Senior Software Engineer**
Google LLC, Mountain View, California, USA August 2014 - present
- **Graduate Research Assistant**
George Mason University, Fairfax, Virginia, USA September 2008 - July 2014
- **Software Engineering Intern**
Google Inc., Mountain View, California, USA May 2013 - August 2013
- **Software Engineering Intern**
Google Inc., New York City, New York, USA September 2011 - December 2011
- **Mobile Software Engineering Intern**
Sysnet Group, Fairfax, Virginia, USA May 2010 - August 2010
- **IK Card project architecture consultant**
Iran Khodro, Tehran, Iran March 2006 - October 2006
- **J2EE developer and designer**
A'van Corp, Tehran, Iran July 2005 - March 2006
- **Research & Development**
Eide Pardazan Corp, Tehran, Iran July 2004 - January 2005
- **Admin of Linux server and clients**
ECE department, University of Tehran, Tehran, Iran July 2003 - October 2004

RESEARCH INTERESTS

- Software Engineering
- Software Architecture and Design
- Software Analysis and Testing
- Mobile and Pervasive Software Systems

Refereed Journal Articles and Book Chapters:

- TOSEM** J5. Alireza Sadeghi, **Naeem Esfahani**, and Sam Malek. “*Ensuring the Consistency of Adaptation through Inter- and Intra-Component Dependency Analysis*”. ACM Transactions on Software Engineering and Methodology (TOSEM), Vol. 26, No. 2, July 2017.
- TAAS** J4. **Naeem Esfahani**, Eric Yuan, Kyle R. Canavera, and Sam Malek. “*Inferring Software Component Interaction Dependencies for Adaptation Support*”. ACM Transactions on Autonomous and Adaptive Systems (TAAS), Vol. 10, No. 4, January 2016.
- TAAS** J3. Eric Yuan, **Naeem Esfahani**, and Sam Malek. “*A Systematic Survey of Self-Protecting Software Systems*”. ACM Transactions on Autonomous and Adaptive Systems (TAAS), Vol. 8, No. 4, January 2014.
- TSE** J2. **Naeem Esfahani**, Ahmed Elkhodary, and Sam Malek. “*A Learning-Based Framework for Engineering Feature-Oriented Self-Adaptive Software Systems*”. IEEE Transactions on Software Engineering (TSE), Vol. 39, No. 11, November 2013.
- B1. **Naeem Esfahani** and Sam Malek. “*Uncertainty in Self-Adaptive Software Systems*”. Software Engineering for Self-Adaptive Systems II (SEfSAS 2 Book), Editors R. de Lemos, H. Giese, H. Müller and M. Shaw, Lecture Notes on Computer Science Hot Topics, Springer, 2013.
- IST** J1. **Naeem Esfahani** and Sam Malek. “*Utilizing Architectural Styles to Enhance Adaptation Support in Middleware Platforms*”. Information and Software Technology (IST) Journal, Vol. 54, No. 7, July 2012.

Refereed Conference and Workshop Proceedings:

- ICSE SEIP** C16. Stas Negara, **Naeem Esfahani**, and Ray Buse. “*Practical Android Test Recording with Espresso Test Recorder*”. The 41st International Conference on Software Engineering (ICSE 2019), Software Engineering in Practice (SEIP) Track, Montreal, Canada, May 2019.
- W5. Alireza Sadeghi, **Naeem Esfahani**, and Sam Malek. “*Mining Mobile App Markets for Prioritization of Security Assessment Effort*”. The 2nd International Workshop on App Market Analytics (WAMA 2017), Paderborn, Germany, September 2017.
- SEAMS** C15. Eric Yuan, **Naeem Esfahani**, and Sam Malek. “*Automated Mining of Software Component Interactions for Self-Adaptation*”. The 9th International Conference on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2014), Hyderabad, India, June 2014. (19% acceptance rate)
- FASE** C14. Alireza Sadeghi, **Naeem Esfahani**, and Sam Malek. “*Mining the Categorized Software Repositories to Improve the Analysis of Security Vulnerabilities*”. The 17th International Conference on Fundamental Approaches to Software Engineering (FASE 2014), Grenoble, France, April 2014. (23% acceptance rate)
- ICSE** C13. **Naeem Esfahani**, Sam Malek, and Kaveh Razavi. “*GuideArch: Guiding the Exploration of Architectural Solution Space under Uncertainty*”. The 35th International Conference on Software Engineering (ICSE 2013), San Francisco, California, USA, May 2013. (18% acceptance rate)
- W4. Nariman Mirzaei, Sam Malek, Corina S. Păsăreanu, **Naeem Esfahani**, and Riyadh Mahmood. “*Testing Android Apps Through Symbolic Execution*”. The Java Pathfinder Workshop 2012 (JPF 2012), Cary, North Carolina, USA, November 2012.
- FSE NIER** C12. **Naeem Esfahani**, Kaveh Razavi, and Sam Malek. “*Dealing with Uncertainty in Early Software Architecture*”. The 20th International Symposium on the Foundations of Software Engineering (2012 FSE-20), New Ideas and Emerging Results (NIER) Track, Cary, North Carolina, USA, November 2012. (20% acceptance rate)

- FSE** C11. Kyle R. Canavera, **Naeem Esfahani**, and Sam Malek. “*Mining the Execution History of a Software System to Infer the Best Time for its Adaptation*”. The 20th International Symposium on the Foundations of Software Engineering (2012 FSE-20), Cary, North Carolina, USA, November 2012. (17% acceptance rate)
- W3. Riyadh Mahmood, **Naeem Esfahani**, Thabet Kacem, Nariman Mirzaei, Sam Malek, and Angelos Stavrou. “*A Whitebox Approach for Automated Security Testing of Android Applications on the Cloud*”. The 7th International Workshop on Automation of Software Test (AST 2012), Zurich, Switzerland, June 2012.
- C10. Sam Malek, **Naeem Esfahani**, Thabet Kacem, Riyadh Mahmood, Nariman Mirzaei, and Angelos Stavrou. “*A Framework for Automated Security Testing of Android Applications on the Cloud*”. The 6th International Conference on Software Security and Reliability (SERE 2012), Washington, DC, USA, June 2012.
- ASE DS** C9. **Naeem Esfahani**. “*A Framework for Managing Uncertainty in Self-Adaptive Software Systems*”. The 26th IEEE/ACM International Conference On Automated Software Engineering (ASE 2011), Doctoral Symposium (DS), Lawrence, Kansas, USA, November 2011.
- FSE** C8. **Naeem Esfahani**, Ehsan Kourosfar, and Sam Malek. “*Taming Uncertainty in Self-Adaptive Software*”. The 8th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2011), Szeged, Hungary, September 2011. (16% acceptance rate)
- FSE** C7. Ahmed Elkhodary, **Naeem Esfahani**, and Sam Malek. “*FUSION: A Learning-Based Approach for Engineering Self-Adaptive Software Systems*”. The 18th International Symposium on the Foundations of Software Engineering (2010 FSE-18), Santa Fe, New Mexico, USA, November 2010. (20% acceptance rate)
- C6. **Naeem Esfahani** and Sam Malek. “*On the Role of Architectural Styles in Improving the Adaptation Support of Middleware Platforms*”. The 4th European Conference on Software Architecture (ECSA 2010), Copenhagen, Denmark, August 2010.
- C5. Mohsen Asadi, **Naeem Esfahani**, and Raman Ramsin. “*Process Patterns for MDA-Based Software Development*”. The 8th ACIS Conference on Software Engineering Research, management and Applications (SERA 2010), Montreal, Canada, May 2010.
- ICSE** C4. **Naeem Esfahani** and Sam Malek. “*Social Computing Networks: A New Paradigm for Engineering Self-Adaptive Pervasive Software Systems*”. The 32nd International Conference on Software Engineering (ICSE 2010), New Ideas and Emerging Results (NIER) Track, Cape Town, South Africa, May 2010. (25% acceptance rate)
- NIER**
- W2. Ahmed Elkhodary, Sam Malek, and **Naeem Esfahani**. “*On the Role of Features in Analyzing the Architecture of Self-Adaptive Software Systems*”. The 4th International Workshop on models@runtime, Denver, Colorado, USA, October 2009. (20% acceptance rate)
- MODELS** C3. **Naeem Esfahani**, Sam Malek, João P. Sousa, Hassan Gomaa, and Daniel A. Menascé. “*A Modeling Language for Activity-Oriented Composition of Service-Oriented Software Systems*”. The 12th International Conference on Model Driven Engineering Languages and Systems (MODELS 2009), Denver, Colorado, USA, October 2009. (16% acceptance rate)
- W1. Sam Malek, **Naeem Esfahani**, Daniel A. Menascé, João P. Sousa, and Hassan Gomaa. “*Self-Architecting Software SYstems (SASSY) from QoS-Annotated Activity Models*”. The 31st International Conference on Software Engineering (ICSE 2009) workshop on Principles of Engineering Service Oriented Systems (PESOS 2009), Vancouver, Canada, May 2009. (23% acceptance rate)
- C2. **Naeem Esfahani**, Seyyed-Hassan Mirian-Hosseiniabadi, and Kamyar Rafati. “*Real-Time Analysis Process Patterns*”. The 13th International CSI Computer Conference (CSICC’08), Kish Island, Persian Gulf, Iran, March 2008.
- C1. Kamyar Rafati, **Naeem Esfahani**, and Mohammad Ghodsi. “*Kinetic Data Structures for Routing Problem in Mobile Sensor Networks*”. The 12th International CSI Computer Conference (CSICC’07), Tehran, Iran, February 2007.

Articles Under Preparation:

- TSE U1. **Naeem Esfahani** and Sam Malek. “*POISED: A Possibilistic Approach for Dealing with Uncertainty of Decision Making in Self-Adaptive Software Systems*”. To be submitted to IEEE Transactions on Software Engineering (TSE).

RESEARCH GRANTS (helped my advisor in writing the proposals)

“CAREER: A Mining-Based Approach for Consistent and Timely Adaptation

- **of Component-Based Software”**

National Science Foundation (NSF)

2/1/2013 - 1/31/2018

- Award Amount: \$451,481
- Award Number: CCF-1252644

“Mining the Execution History of a Software System to Infer the Best Time

- **for its Adaptation”**

National Science Foundation (NSF)

2/1/2012 - 1/31/2013

- Award Amount: \$80,000
- Award Number: CCF-1217503

HONORS & AWARDS

Outstanding Graduate Student Award, CS Department, Volgenau School of Engineering, GMU 2014
Invited to attend Future of Software Engineering Symposium (including travel award) July 2013
George Mason University Doctoral Fellowship Fall 2009, Spring 2010, Spring 2011
ACM SIGSOFT CAPS (travel award to MODELS conference) August 2009
Top student of the class during B.Sc. study 2005
University of Tehran FOE Awards (The top student in each year) 2002, 2003

TEACHING EXPERIENCE

- **191004 - Advanced Operating System**

Tadbir Institute (Adjunct Professor)

Fall 2007

TEACHING ASSISTANTSHIPS

- **SWE 443 - Software Architectures**

George Mason University (Dr. Malek)

Spring 2013

- **40-474 - Software Engineering**

Sharif University of Technology (Dr. Mirian-Hosseiniabadi)

Spring 2007, Fall 2006

- **8101424 - Algorithm Design**

University of Tehran (Dr. Rostamabadi)

Fall 2004, Spring 2004

- **8101119 - Advanced Programming**

University of Tehran (Mr. Sheikh Attar)

Spring 2004

- **8101347 - Basics of Computer Programming**

University of Tehran (Dr. Taghiyareh)

Fall 2002

ADVISING EXPERIENCE (as a Ph.D. Candidate in George Mason University)

- **Alireza Sadeghi**
Ph.D. Student 2012 - 2014
- **Kaveh Razavi**
M.Sc. Student 2011 - 2014
- **Kyle R. Canavera**
Ph.D. Student 2011 - 2014

SERVICE

- Reviewer for 1st International Workshop on Self-Protecting Systems April 2019
Reviewer for IEEE Transactions on Software Engineering June 2017
External reviewer for 39th Int'l Conf. on Software Engineering January 2017
Reviewer for 11th Int'l Symp. on Soft. Eng. for Adapt. and Self-Managing Sys. February 2016
Reviewer for IEEE Transactions on Software Engineering January 2016
Reviewer for ACM Transactions on Autonomous and Adaptive Systems January 2016
Reviewer for IEEE Transactions on Software Engineering March 2015
Reviewer for ACM Transactions on Software Engineering and Methodology January 2015
Reviewer for IEEE Transactions on Software Engineering December 2014
Reviewer for IEEE Transactions on Parallel and Distributed Systems May 2014
Reviewer for IEEE Transactions on Software Engineering April 2014
External reviewer for 9th Int'l Symp. on Soft. Eng. for Adapt. and Self-Managing Sys. . . . February 2014
External reviewer for 36th Int'l Conf. on Software Engineering November 2013
Reviewer for IEEE Transactions on Software Engineering November 2013
Reviewer for Int'l Wrkshp. on Software Engineering for Sensor Network Applications February 2013
Web chair of 4th Int'l ACM Sigsoft Symp. on Architecting Critical Systems 2012-2013
Reviewer for Journal of Systems and Software May 2012
Reviewer for Int'l Wrkshp. on Developing Tools as Plug-ins March 2012
Reviewer for Journal of Software: Practice and Experience August 2011
Reviewer for Journal of Systems and Software June 2011
External reviewer for Brazilian Conf. on Software: Theory and Practice May 2011
Student Volunteer at 18th Int'l Symp. on Foundations of Software Engineering November 2010
Reviewer for ISeCure Journal October 2010
External reviewer for 33rd Int'l Conf. on Software Engineering October 2010
Reviewer for ISeCure Journal June 2010
Organizing seminar course, CE Dep., Sharif University of Technology December 2006
Chairman of ACM Student Chapter, ECE Dep., University of Tehran 2003-2004
Managing freshman ECE students in a multi-day orientation camp 2002,2003,2004
Representative of the class in the Student Education Council, ECE Dep., University of Tehran . 2002-2003
Representative of the class in ACM Student Chapter, ECE Dep., University of Tehran 2001-2002

TECHNICAL SKILLS

- **Platforms**
Java 2 Platform Enterprise Edition (J2EE), MS .Net, Service Oriented Architecture (SOA), Android, iPhone, MS Windows CE, Eclipse, Generic Modeling Environment (GME)
- **Programming**
Java, C++, C#, Objective-C, C, Pascal, Assembly, Prolog, Verilog, Matlab, R, Python, JavaScript, Web Development
- **Modeling**
Unified Modeling Language (UML), Model Driven Architecture (MDA), Domain Specific Modeling (DSM), Business Process Modeling Notation (BPMN), Formal Methods

- **Operating Systems**

Linux, MS Windows, Mac OS X, MS DOS

- **Miscellaneous**

Technical Writing, Software Engineering Processes, Databases, Software Architecture, Algorithms, Patterns, Software Quality Assurance, Software Testing, Rational Unified Process (RUP), Agile Processes, Rational Method Composer (RMC), System Integration, MS Office, L^AT_EX, Networks, Micro Controllers, Field Programmable Gate Array (FPGA)

REFERENCES

- **Sam Malek**

Associate Professor

- School of Information and Computer Sciences, University of California, Irvine, California
- <https://malek.ics.uci.edu/>, +1-949-824-0639, malek@uci.edu

- **Daniel A. Menascé**

University Professor, Fellow of the IEEE, Fellow of the ACM

- Department of Computer Science, George Mason University, Fairfax, Virginia
- <http://cs.gmu.edu/faculty/menasce.html>, +1-703-993-1537, menasce@gmu.edu

- **Nenad Medvidović**

Professor and Associate Chair

- Computer Science Department, University of Southern California, Los Angeles, California
- <http://sunset.usc.edu/~nen/>, +1-213-740-5579, nen@usc.edu

- **Hassan Gomaa**

Professor

- Department of Computer Science, George Mason University, Fairfax, Virginia
- <http://mason.gmu.edu/~hgomaa/>, +1-703-993-1652, hgomaa@gmu.edu

- **Seyed-Hassan Mirian-Hosseiniabadi**

Associate Professor

- Computer Engineering Department, Sharif University of Technology, Tehran, Iran
- <http://ce.sharif.edu/~mirian>, +98-21-6616-6629, hmirian@sharif.edu

- **Marjan Sirjani**

Professor

- School of Computer Science, Reykjavík University, Reykjavík, Iceland
- <http://www.ru.is/faculty/marjan/>, +354-599-6200, marjan@ru.is