

Sep. 2018

Bahman Zamani

Department of Software Engineering
Faculty of Computer Engineering
University of Isfahan
Hezar-Jerib, Isfahan 81746-73441, Iran
Phone: +98-311-7934537
Fax: +98-311-6682887
Research Lab: <http://mdse.ui.ac.ir>
Email: zamani@eng.ui.ac.ir

EMPLOYMENT

Tenured Associate Professor Jun. 2018 -
Department of Software Engineering
University of Isfahan, Isfahan, Iran

Tenured Assistant Professor Sep. 2009 - May. 2018
Department of Software Engineering
University of Isfahan, Isfahan, Iran

Research Faculty Member Jan. 1998 - Dec. 2003
Iranian Research Organization for Science & Technology (IROST)
Ministry of Science, Research, and Technology (MSRT), Isfahan, Iran

CEO & Manager of Software Dept. Sep. 1990 - Sep. 1994
Hooshafzar Computer Engineering Company, Isfahan, Iran

ACADEMIC CREDENTIALS

PhD, Computer Science - Software Engineering Jan. 2004 - Jul. 2009
Concordia University, Montreal, QC, Canada
Thesis: On Verifying the Use of a Pattern Language in Model-Driven Design
Supervisor: Professor Greg Butler

MSc, Computer Engineering - Software Engineering Sep. 1994 - Feb. 1997
Sharif University of Technology, Tehran, Iran
Thesis: A Software for Symbolic Execution of Programs
Supervisor: Dr. Sonia Sehat-niaki

BSc, Computer Engineering - Software Engineering Sep. 1985 - Sep. 1990
University of Isfahan, Isfahan, Iran
BSc Project: Action Diagrams

SABBATICAL VISITS

Concordia University, Montreal, Canada Jul. 2018 - Sep. 2018
Research topic: Logging Techniques for Model Transformations
Research lab: Intelligent System-Logging and Monitoring (ISyLM)
Collaborator: Dr. Wahab Hamou-Lhadj

UQAM, Montreal, Canada Jul. 2016 - Aug 2016
Research topic: Android Anti-Patterns
Research lab: Laboratory for Research on Technology for Ecommerce (LATECE)
Collaborator: Dr. Naouel Moha

Concordia University, Montreal, Canada Jul. 2014 - Aug. 2014
Research topic: Model Execution Tracing
Research lab: Intelligent System-Logging and Monitoring (ISyLM)
Collaborator: Dr. Wahab Hamou-Lhadj

RESEARCH INTERESTS

Software Engineering topics, including:

- Model Driven Engineering (MDE)
 - Meta-Modeling & Modeling Languages
 - Model Transformations
 - Model-DDriven Reverse Engineering (MDRE)
 - Model Management
 - Model Execution & Execution Traces
- Software Design Patterns
 - Design Patterns and Anti-Patterns
 - Pattern Language Verification (PLV)
- Software Testing
 - Automatic Test Case Generation
 - Model-Based Testing (MBT)

RESEARCH GRANT FUNDING

Project title: Lossless Compaction of Execution Traces Sep. 2017 - Sep. 2018
Principal Applicant
Funding Source: IMPULSE Iran-Austria
Budget: 11,300 Euros
Austrian Partner: Business Informatics Group (BIG), Vienna University of Technology

Project title: Running an ICT Think Tank for Isfahan municipality May. 2016 - Mar. 2018
Principal Applicant
Funding Source: Isfahan Municipality, Iran
Budget: 163,000,000 IRR

Project title: Investigating the Dimensions of a Customized Software Development Methodology Oct. 2016 - Nov. 2017
Principal Applicant
Funding Source: Isfahan Municipality, Iran
Budget: 197,000,000 IRR

Project title: Designing a Reference Model of Enterprise Architecture for Iranian Municipalities Dec. 2013 - Mar. 2016
Consultant
Funding Source: Isfahan Municipality, Iran
Budget: 132,000,000 IRR

Project title: Defining a Process for Requirements Definition and Management in Software Projects May. 2015 - Jun. 2016
Principal Applicant
Funding Source: Isfahan Municipality, Iran
Budget: 670,000,000 IRR

Project title: Identifying Failure Factors of the Software Projects May. 2013 - Jul. 2014
Principal Applicant
Funding Source: Isfahan Municipality, Iran
Budget: 397,000,000 IRR

GRADUATE STUDENT SUPERVISION

PhD Students

Hayyan Hassan	Sep. 2017 -
Co-Supervised by Dr. Behrouz Tork Ladani	
Thesis Subject: Malware Analysis Using Model-Driven Reverse Engineering	
Samaneh Hoseindoost	Sep. 2017 -
Co-Supervised by Dr. Afsaneh Fatemi	
Thesis Subject: Model Driven Development of Simulators for Emergency Response Environments	
Mohammadreza Sharbaf	Sep. 2016 -
Thesis Subject: Conflict Resolution in Model Merging	
Hosein Moradi	Sep. 2013 -

Co-Supervised by Dr. Kamran Zamanifar
Thesis Title: Model-Driven Development of Thesis Context-aware Service Composition

Fazilat Hojajai Najafabadi Sep. 2013 -
Co-Supervised by Dr. Wahab Hamou-Lhadj
Thesis Title: Techniques to Compact Model Execution Traces in Model Driven Approach

Alireza Khalilian Feb. 2013 -
Co-Supervised by Dr. Ahmad Baraani-Dastjerdi
Thesis Title: Program Analysis Techniques for Domain-Specific Debugging of Software Errors

Leila Samimi Dehkordi Sep. 2012 - Dec. 2018 (Planned)
Co-Supervised by Dr. Shekoufeh Kollahdouz Rahimi
Thesis Title: Model-Driven Development of Bidirectional Model Transformations

Alireza Rouhi Sep. 2011 - Sep. 2017
Thesis Title: Presenting a Process for Generating a Pattern Language Verifier

Master's Students

Maryam Mehrabi Sep. 2017 -
Thesis Subject: Detecting Code Smells in Model Transformations

Sara Adib Sep. 2017 -
Thesis Title: A Framework for Automatic Generation of Location-Based Mobile Applications

Marzieh Ghorbani Sep. 2016 -
Thesis Title: Incremental Model Transformations with ETL

Sorour Jahanbin Sep. 2016 -
Thesis Title: A New Approach for Generating Test Models in Model Transformation Testing

Banafsheh Azizi Sep. 2015 - Jan. 2018
Co-Supervised by Dr. Shekoufeh Kollahdouz Rahimi
Thesis Title: A Novel Approach for Verifying Epsilon Transformations

Neda Karshenas Sep. 2015 - Sep. 2018
Co-Supervised by Dr. Shekoufeh Kollahdouz Rahimi
Thesis Title: A New Approach for Application of Transformation Patterns in Model Transformation Language Using HOT

Atefeh Niroomand Sep. 2015 - Jan. 2018
Co-Supervised by Dr. Behrouz Tork Ladani
Thesis Title: A Model Driven Reverse Engineering Approach for Evaluating the Implemented Access Control Policies

Zahra Jafari Fesharaki Sep. 2014 - Feb. 2017
Co-Supervised by Dr. Afsaneh Fatemi
Thesis Title: A Graphical Metamodel for Crisis Management using Multi Agent Systems

Samaneh Hoseindoost Sep. 2014 - Apr. 2017
Co-Supervised by Dr. Afsaneh Fatemi
Thesis Title: A Model Driven Framework for Developing Multi-Agent Systems in EREs

Mohammadreza Sharbaf Sep. 2014 - Sep. 2016
Thesis Title: A New Approach for Detection and Resolution of Semantic Conflicts in Model Versioning

Amir Savari Sep. 2013 - Dec. 2016
Thesis Title: Automated Test Case Generation and Oracle by Combination of UML Diagrams

Rahim Lotfi Sep. 2013 - Sep. 2015
Thesis Title: A New Pattern for Architectural Design of Enterprise Applications to Facilitate Automatic Code Generation

Mahsa Sadat Panahandeh Sep. 2012 - Feb. 2015
Thesis Title: A Novel Approach for Improving Model Transformation Life Cycle

Shiva Razoolzadeh Sheikh Sep. 2012 - Feb. 2015
Thesis Title: A UML Profile for Patterns of Enterprise Application Architecture

Tahereh Adamzadeh Sep. 2012 - Feb. 2015
Co-Supervised by Dr. Afsaneh Fatemi
Thesis Title: A Modeling Language for Developing Multi-Agent Systems in Emergency Response Environments

Mohammad-Reza Azodi Sep. 2011 - Feb. 2015
Thesis Title: Modeling Non-functional Requirements in Service Oriented Architecture using Model Driven Methods

Amin Rezaee Sep. 2011 - Feb. 2014
Thesis Title: A New Approach to Optimized Generation of Test Cases using UML State Machines

Mahboubeh Taghizadeh Sep. 2011 - Feb. 2014
Co-Supervised by Dr. Behrouz Tork Ladani
Thesis Title: A New Approach to Automated Testing of Access Control Policies using Model Based Technique

AWARDS AND SCHOLARSHIPS

“Most Scalable Solution” and “Audience” Awards Jun. 2018
For “Solving the Quality-based Software-Selection and Hardware-Mapping Problem with ACO” at 11th Transformation Tool Contest (TTC 2018)

“Most Complete” and “Audience” Awards Jun. 2017
For “Solving the Families to Persons Case using EVL+Strace” at 10th Transformation Tool Contest (TTC 2017)

“Best Overall”, “Most Abstract”, and “Audience” Awards Jun. 2017
For “Solving the State Elimination Case Study using Epsilon” at 10th Transformation Tool Contest (TTC 2017)

PhD Scholarship Jan. 2004 - Dec 2007
Awarded by the Ministry of Science, Research, and Technology (MSRT), Iran

INVITED TALKS AND WORKSHOPS

Workshop on Automatic Generation of Location-Based Android Applications Using a Model-Driven Approach Nov. 2017
Location: University of Isfahan, Isfahan, Iran

Talk on Requirements Engineering and Project Success Dec. 2014
Event: 3rd National Festival on Urban-Research
Location: Isfahan Municipality, Isfahan, Iran

Talk on Process & Methodology in Software Development Nov. 2014
Event: Isfahan Automation & Computer Fair
Location: Isfahan Province International Exhibition, Isfahan, Iran

Panel on Academic Ethics Dec. 2012
Event: University Research Week
Location: University of Isfahan, Isfahan, Iran

Workshop on Typesetting Academic Papers using Latex Oct. 2010
Event: 6th Iranian Conference on Machine Vision and Image Processing (MVIP 2010)
Location: University of Isfahan, Isfahan, Iran

Talk on Computer Science vs. Software Engineering May. 2010
Event: University Research Week
Location: Sheikhabaee University, Isfahan, Iran

Talk on Model-Driven Software Engineering May. 2010

Event: University Research Week
Location: Majlesi Azad University, Isfahan, Iran

Talk on Agile Software Development Methodologies Oct. 2009
Event: ICT Managers Summit
Location: ICT Organization of Isfahan Municipality, Isfahan, Iran

Workshop on Latex for Graduate Students Oct. 2007
Location: Concordia University, Montreal, QC, Canada

TEACHING EXPERIENCE

Assistant Professor Sep. 2009 -
Department of Software Engineering, University of Isfahan, Isfahan, Iran

- Teaching Undergraduate Courses
 - Technical Presentation
 - Software Engineering I & II
 - Object-Oriented Analysis and Design
 - Formal Languages and Automata Theory
 - Fundamentals of Computers and Programming
 - Design and Implementation of Programming Languages
- Teaching Graduate Courses
 - Software Architecture (MSc Level)
 - Advanced Software Engineering (MSc Level)
 - Model-Driven Software Engineering (MSc & PhD Level)

Teaching Assistant Sep. 2006 - Sep. 2008
Department of Computer Science and Software Engineering, Concordia University, Montreal, QC, Canada

- Teaching Assistant for Undergraduate Courses:
 - Software Process
 - Introduction to Theoretical Computer Science

Part-time Lecturer Sep. 1998 - Dec. 2003
Department of Computer Engineering, Sheikhabaee Private University, Isfahan, Iran

- Teaching Undergraduate Courses
 - Discrete Structures
 - Principles of Compiler Design
 - Formal Languages and Automata Theory

- Design and Implementation of Programming Languages

Part-time Lecturer

Sep. 1997 - Dec. 2001

Department of Computer Engineering, Islamic Azad University of Najafabad, Isfahan, Iran

- Teaching Undergraduate Courses
 - Advanced Programming
 - Principles of Compiler Design
 - Formal Languages and Automata Theory
 - Introduction to Computers and Programming
 - Design and Implementation of Programming Languages

ADMINISTRATIVE EXPERIENCE

Manager, Office of Industry Relations

Oct. 2017 -

University of Isfahan, Isfahan, Iran

- Managing 8 staff members
- The only connection point between the university and the industry

Chair, Department of Software Engineering

Jan. 2013 - Jan. 2015

University of Isfahan, Isfahan, Iran

- Managing 9 professors, 30+ PhD students, 50+ MSc students, and 120+ BSc students
- Arranging and running the department bi-weekly meetings
- Hiring new faculty members
- Monitoring the quality of education and research at the department level

Chair Academic Assistant, Department of Software Engineering

Jan. 2010 - Dec. 2012

University of Isfahan, Isfahan, Iran

- Designing the course schedule at all levels, BSc, MSc, and PhD
- Updating the curricula of BSc and MSc level courses

PUBLICATIONS

Book Translations:

- [1] David C. kung. *Object-Oriented Software Engineering: An Agile Unified Methodology*. McGraw-Hill Higher Education, 2013.
Chapters 1 to 12 are translated into Persian by B. Zamani and A. Fatemi, University of Isfahan, 2015.

Journal Papers:

- [1] Leila Samimi-Dehkordi, Bahman Zamani, and Shekoufeh Kolahdouz-Rahimi. EVL+Strace: a novel bidirectional model transformation approach. *Elsevier's Information and Software Technology (IST)*, 100:47–72, 2018.
- [2] Atefeh Nirumand, Bahman Zamani, and Behrouz Tork-Ladani. VAnDroid: a framework for vulnerability analysis of android applications using a model driven reverse engineering technique. *Wiley's Software: Practice and Experience (SPE)*, 2018. Accepted for Publication.
- [3] Alireza Khalilian, Ahmad Baraani-Dastjerdi, and Bahman Zamani. A novel taxonomy of components and use cases based on categorical decomposition of automatic program repair techniques. *Wiley's Software: Practice and Experience (SPE)*, 2018. Under Second Review.
- [4] Fazilat Hojaji, Tanja Mayerhofer, Bahman Zamani, Wahab Hamou-Lhadj, and Erwan Bousse. Tracing executable models: A systematic mapping study. *Springer's Software & Systems Modeling (SoSyM)*, 2018. Under Review.
- [5] Fazilat Hojaji, Bahman Zamani, Wahab Hamou-Lhadj, Tanja Mayerhofer, and Erwan Bousse. Lossless compaction of model execution traces. *Springer's Software & Systems Modeling (SoSyM)*, 2018. Under Review.
- [6] Banafsheh Azizi, Bahman Zamani, and Shekoufeh Kolahdouz-Rahimi. SEET: Symbolic Execution of ETL Transformations. *Elsevier's Journal of Systems and Software (JSS)*, 2018. Under Review.
- [7] Leila Samimi-Dehkordi, Bahman Zamani, and Shekoufeh Kolahdouz-Rahimi. Leveraging software product line engineering in the development of domain-specific metamodeling languages. *Elsevier's Computer Languages, Systems and Structures*, 2018. Under Review.
- [8] Mahsa Panahandeh, Bahman Zamani, and Wahab Hamou-Lhadj. MUPPIT: a Method for Using Proper Patterns In Transformations. *Springer's Software & Systems Modeling (SoSyM)*, 2018. Under Review.
- [9] Bahman Zamani and Shiva Rasoulzadeh. A domain specific modeling language for enterprise application development. *International Journal of Information Technologies and Systems Approach (IJITSA)*, 11(2):51–70, 2018.
- [10] Samaneh HoseinDoost, Tahereh Adamzadeh, Bahman Zamani, and Afsaneh Fatemi. A model-driven framework for developing multi-agent systems in emergency response environments. *Springer's Software & Systems Modeling (SoSyM)*, pages 1–28, 2017.
- [11] Alireza Rouhi and Bahman Zamani. A model-based framework for automatic generation of a pattern language verifier. *Wiley's Software: Practice and Experience (SPE)*, 47(12):1945–1980, 2017.
- [12] Mahsa Sadat Panahandeh and Bahman Zamani. Automatic pattern proposition in transformation life cycle. *International Journal of Information Technologies and Systems Approach (IJITSA)*, 10(2):1–16, 2017.

- [13] Alireza Rouhi and Bahman Zamani. Towards a formal model of patterns and pattern languages. *Elsevier's Information and Software Technology (IST)*, 79:1–16, 2016.
- [14] Bahman Zamani and Greg Butler. Pattern language verification in model driven design. *Elsevier's Information Sciences*, 237:343–355, 2013.
- [15] Samaneh Vaez Dalili, Sayed Mehran Sharafi, and Bahman Zamani. A new model-based test technique using formal specification of software architectures. *International Review on Computers and Software (IRECOS)*, 7(1):31–39, 2012.
- [16] Bahman Zamani and Greg Butler. Smell detection in UML designs which utilize pattern languages. *Iranian Journal of Electrical and Computer Engineering (IJECE)*, 8(1):47–52, 2009.
- [17] Bahman Zamani, Greg Butler, and Sahar Kayhani. Tool support for pattern selection and use. *Elsevier's Electronic Notes in Theoretical Computer Science (ENTCS)*, 233:127–142, 2009.

Conference Papers:

- [1] Sorour Jahanbin and Bahman Zamani. Test Model Generation using Equivalence Partitioning. In *Proc. 8th International Conference on Computer and Knowledge Engineering (ICCKE 2018)*. IEEE, 2018. Accepted.
- [2] Mohammadreza Sharbaf and Bahman Zamani. A UML profile for modeling the conflicts in model merging. In *Proc. 4th International Conference on Knowledge-Based Engineering and Innovation (KBEI 2017)*, pages 0197–0202. IEEE, 2017.
- [3] Mohammadreza Sharbaf, Shekoufeh Kollahdouz-Rahimi, and Bahman Zamani. Solving the state elimination case study using Epsilon. In *Proc. 10th Transformation Tool Contest (TTC 2017)*, 2017.
- [4] Leila Samimi-Dehkordi, Bahman Zamani, and Shekoufeh Kollahdouz-Rahimi. Solving the families to persons case using EVL+Strace. In *Proc. 10th Transformation Tool Contest (TTC 2017)*, 2017.
- [5] Banafsheh Azizi, Bahman Zamani, and Shekoufeh Kollahdouz-Rahimi. Contract verification of ETL transformations. In *Proc. 7th International Conference on Computer and Knowledge Engineering (ICCKE 2017)*, pages 154–160. IEEE, 2017.
- [6] Leila Samimi-Dehkordi, Bahman Zamani, and Shekoufeh Kollahdouz-Rahimi. Bidirectional model transformation approaches a comparative study. In *Proc. 6th International Conference on Computer and Knowledge Engineering (ICCKE 2016)*, pages 314–320. IEEE, 2016.
- [7] Alireza Khalilian, Ahmad Baraani-Dastjerdi, and Bahman Zamani. On the evaluation of automatic program repair techniques and tools. In *Proc. 24th Iranian Conference on Electrical Engineering (ICEE 2016)*, pages 61–66. IEEE, 2016.
- [8] Fazilat Hojaji, Bahman Zamani, and Abdelwahab Hamou-Lhadj. Towards a tracing framework for model-driven software systems. In *Proc. 6th International Conference on Computer and Knowledge Engineering (ICCKE 2016)*, pages 298–303. IEEE, 2016.

- [9] Mohammadreza Sharbaf, Bahman Zamani, and Behrouz Tork Ladani. Towards automatic generation of formal specifications for UML consistency verification. In *Proc. 2nd International Conference on Knowledge-Based Engineering and Innovation (KBEI 2015)*, pages 860–865. IEEE, 2015.
- [10] Leila Samimi-Dehkordi, Bahman Zamani, and Shekoufeh Kolahdouz-Rahimi. From trace-based inter-model validation to bidirectional model synchronization with reconciliation. In *Proc. 5th International Conference on Computer and Knowledge Engineering (ICCKE 2015)*, pages 123–130. IEEE, 2015.
- [11] Leila Samimi-Dehkordi, Alireza Khalilian, and Bahman Zamani. Programming language criteria for model transformation evaluation. In *Proc. 4th International Conference on Computer and Knowledge Engineering (ICCKE 2014)*, pages 370–375. IEEE, 2014.
- [12] Tahereh Adamzadeh, Bahman Zamani, and Afsaneh Fatemi. A modeling language to model mitigation in emergency response environments. In *Proc. 4th International Conference on Computer and Knowledge Engineering (ICCKE 2014)*, pages 302–307. IEEE, 2014.
- [13] Bahman Zamani and Greg Butler. Describing pattern languages for checking design models. In *Proc. 16th Asia-Pacific Software Engineering Conference (APSEC'09)*, pages 197–204. IEEE, 2009.
- [14] Bahman Zamani, Sahar Kayhani, and Greg Butler. A pattern language verifier for web-based enterprise applications. In *Proc. 11th International Conference on Model Driven Engineering Languages and Systems (MODELS'08)*, volume 5301 of *Lecture Notes in Computer Science*, pages 553–567. Springer, 2008.
- [15] Bahman Zamani and Greg Butler. Critiquing the application of pattern languages on UML models. In *Proc. 2nd Workshop on Quality in Modeling, MODELS'07*, pages 18–35, 2007.