Ehsan Khamespanah

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| **Personal Information** | Nationality: Iran  Date of Birth: June 14th, 1984 |
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| **Contact Information** | Mobile: (+98) 912 257 6949  Email: [e.khamespanah@ut.ac.ir](mailto:e.khamespanah@ut.ac.ir)  [ehsan13@ru.is](mailto:ehsan13@ru.is) |
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| **Field of Interests** | • Formal Method  • Software Architectures  • Software Development Process  • Software Non-Functional Requirement Analysis  • Mobile Application Architecture and Design  • Object-Oriented Design |
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| **Education** | **Reykjavik University, Iceland**  Ph.D. in Computer Science (Jan. 2013 – Jun. 2018) in a double-degree program with Electrical and Computer Engineering faculty of University of Tehran.  Thesis: “Modeling, Verification, and Analysis of Timed Actor Systems”  Supervisor: Prof. Marjan Sirjani  Examiner:  • Tomas Henzinger: Professor, Institute of Science and Technology Austria  Committee:  • Edward A. Lee: Robert S. Pepper Distinguished Professor Emeritus  University of California at Berkeley  • Marcel Kyas: Assistant Professor, Reykjavik University  • Ramtin Khosravi, Assistant Professor, University of Tehran  • Fatemeh Ghassemi, Assistant Professor, University of Tehran  **University of Tehran, Iran**  Ph.D. in Computer Engineering (Sep. 2010 – Jan. 2017)  • Major in Software Engineering  Thesis: “Modeling, Verification, and Analysis of Timed Actor Systems”  Supervisors: Dr. Ramtin Khosravi and Prof. Marjan Sirjani  Committee:  • Ali Movaghar, Professor, Sharif University of Technology  • Hassan Haghighi, Associate Professor, Shahid Beheshti University  • Mehdi Kargahi, Associate Professor, University of Tehran  • Fatemeh Ghassemi, Assistant Professor, University of Tehran  **Amirkabir University of Technology, Iran**  M.S. in Computer Engineering (Sep. 2007 – Jan. 2010)  • Major in Software Engineering  Thesis: “Distributed Model Checking of Object Based Modeling Languages”, under the supervision of Prof. Mohammadreza Razzazi    **University of Tehran, Iran**  B.Sc. in Computer Engineering (Sep. 2001 – Sep. 2007)  • Major in Software Engineering  Thesis: “Implementation of Model Checking Tool for Verification of SystemC Models”, under the supervision of Prof. Marjan Sirjani    **Diploma in Mathematics, Physics and Chemistry (2001) From National Organization for Development of Exceptional Talents (NODET).** |
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| **Publication** | **Journal Papers:**   1. Maryam Bagheri, Marjan Sirjani, **Ehsan Khamespanah**, Narges Khakpour, Ilge Akkaya, Ali Movaghar, Edward A. Lee, *“Coordinated Actor Model of Self-Adaptive Track-Based Traffic Control Systems”*, Journal of Systems and Software, 2018 2. **Ehsan Khamespanah**, Ramtin Khosravi, Marjan Sirjani, *“An Efficient TCTL Model Checking Algorithm and a Reduction Technique for Verification of Timed Actor Models”*, Science of Computer Programming, 2018 3. **Ehsan Khamespanah**, Marjan Sirjani, Kirill Mechitov, Gul A. Agha, “*Modeling and Analyzing Real-Time Wireless Sensor and Actuator Networks Using Actors and Model Checking*”, Software Tools for Technology Transfer, 2018 4. Frank S. de Boer, Vlad Serbanescu, Reiner Hähnle, Ludovic Henrio, Justine Rochas, Crystal Chang Din, Einar Broch Johnsen, Marjan Sirjani, **Ehsan Khamespanah**, Kiko Fernandez-Reyes, Albert Mingkun Yang, *“A Survey of Active Object Languages”*. ACM Computing. Survey. 2018 5. Ali Jafari, **Ehsan Khamespanah**, Haukur Kristinsson, Marjan Sirjani, Brynjar Magnusson, *“Statistical model checking of Timed Rebeca models”*, Computer Languages, Systems & Structures, 2016. 6. Ali Jafari, **Ehsan Khamespanah**, Marjan Sirjani, Holger Hermanns, Matteo Cimini, *“PTRebeca: Modeling and analysis of distributed and asynchronous systems”*, Science of Computer Programming, Elsevier, 2016. 7. Zeynab Sabahi-Kaviani, Ramtin Khosravi, Peter Csaba Ölveczky, **Ehsan Khamespanah**, Marjan Sirjani, *“Formal semantics and efficient analysis of Timed Rebeca in Real-Time Maude”*. Science of Computer Programing, 2015 8. **Ehsan Khamespanah**, Marjan Sirjani, Zeynab Sabahi Kaviani, Ramtin Khosravi, and Mohammadjavad Izadi, *“Timed-Rebeca Schedulability and Deadlock-Freedom Analysis Using Floating-Time Transition System”*, Science of Computer Programming, Elsevier, 2014. 9. Mohammadmahdi Jaghoori, Marjan Sirjani, Mohammadreza Mousavi, **Ehsan Khamespanah**, and Ali Movaghar, *“Symmetry and Partial Order Reduction Techniques in Model Checking Rebeca”*, Journal of Acta Informatica, 2010. 10. Niloofar Razavi, Raziyeh Behjati, Hamideh Sabouri, **Ehsan Khamespanah**, Amin Shali, and Marjan Sirjani, *“Sysfier: Actor-based Formal Verification of SystemC”*, ACM Transaction on Embedded Systems, 2010.   **Conference Papaers:**   1. Fahimeh Rahemi, **Ehsan Khamespanah**, Ramtin Khosravi, *“Improving the Performance of Actor-Based Programs Using a New Actor to Thread Association Technique”*, in the proceeding of DAIS, 2018 2. Puria Mellati, **Ehsan Khamespanah**, Ramtin Khosravi, *“LeeTL: LTL with Quantifications over Model Objects”*, in the proceeding of SPIN, 2017. 3. Marjan Sirjani **Ehsan Khamespanah**, Kirill Mechitov, Gul A. Agha, *“A Compositional Approach for Modeling and Timing Analysis of Wireless Sensor and Actuator Networks”*, in the proceeding of CRTS, 2016. 4. Maryam Bagheri, **Ehsan Khamespanah**, Marjan Sirjani, Ali Movaghar, Edward A. Lee, *“Runtime Compositional Analysis of Track-based Traffic Control Systems”*, in the proceeding of CRTS, 2016. 5. Maryam Bagheri, Ilge Akkaya, **Ehsan Khamespanah**, Narges Khakpour, Marjan Sirjani, Ali Movaghar, Edward A. Lee, “*Coordinated Actors for Reliable Self-Adaptive Systems*”, in the proceeding of FACS 2016. 6. Marjan Sirjani, **Ehsan Khamespanah**, *“On Time Actors”*, in the proceeding of Theory and Practice of Formal Methods, 2016. 7. **Ehsan Khamespanah**, Kirill Mechitov, Marjan Sirjani, Gul A. Agha, *“Schedulability Analysis of Distributed Real-Time Sensor Network Applications Using Actor-Based Model Checking”*, in the proceeding of SPIN, 2016. 8. Arvin Zakerian, **Ehsan Khamespanah**, Marjan Sirjani, Ramtin Khosravi, *“Jacco: More Efficient Model Checking Toolset for Java Actor Programs”*, in the proceeding of AGERE, 2015. 9. **Ehsan Khamespanah**, Marjan Sirjani, Mahesh Viswanathan, Ramtin Khosravi, *“Floating Time Transition System: More Efficient Analysis of Timed Actors”*, in the proceeding of FACS, 2015. 10. **Ehsan Khamespanah**, Marjan Sirjani, Mohammadreza Mousavi, Zeynab Sabahi Kaviani, Mohammadreza Razzazi, *“State Distribution Policy for Distributed Model Checking of Actor Models”*, in the proceeding of AVoCS, 2015. 11. **Ehsan Khamespanah**, Ramtin Khosravi, Marjan Sirjani, *“Efficient TCTL Model Checking Algorithm for Timed Actors”*, in Proceeding of AGERE, 2014. 12. Brynjar Magnusson, **Ehsan Khamespanah**, Marjan Sirjani, Ramtin Khosravi, *“Event-based Analysis of Timed Rebeca Models using SQL”*, in Proceeding of AGERE, 2014. 13. Ali Jafari, **Ehsan Khamespanah**, Marjan Sirjani, Holger Hermanns, *“Performance Analysis of Distributed and Asynchronous Systems using Probabilistic Timed Actors”*, in Proceeding of AVoCS, 2014. 14. Haukur Kristinsson, Ali Jafari, **Ehsan Khamespanah**, Marjan Sirjani, *“Analyzing Timed Rebeca Using McErlang”*, in Proceeding of AGERE, 2013. 15. Zeynab Sabahi Kaviani, Ramtin Khosravi, Marjan Sirjani, Peter Ölveczky, and **Ehsan Khamespanah**, *"*[*Formal Semantics and Analysis of Timed Rebeca in Real-Time Maude*](http://ramtung.ir/pub/ftscs2013.pdf)*"*, in Proceeding of FTSCS 2013. 16. **Ehsan Khamespanah**, Zeynab Sabahi Kaviani, Marjan Sirjani, Ramtin Khosravi, and Mohammadjavad Izadi, *“Timed-Rebeca Schedulability and Deadlock-Freedom Analysis Using Floating-Time Transition System”*, in Proceeding of AGERE, 2012. 17. Mohammadreza Razzazi and **Ehsan Khamespanah**, *“Semi-Distributed State Space Generation Algorithm for Rebeca Model Checker”*, in Proceeding of CSICC, 2009. 18. **Ehsan Khamespanah** and Mohammadreza Razzazi, *“Semi-Distributed Semi-Distributed LTL Model Checking for Actor Based Modeling Languages”*, in Proceeding of SoftCom, 2009. |
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| **Teaching Experience** | **School of ECE, College of Engineering, University of Tehran**  **Lecturer of courses:**  • Software Testing (Under Grad.) – Fall 2018, Fall 2017, Fall 2016.  • Internet Engineering (Under Grad.) – Spring 2019, Spring 2017.  • Data Structure and Algorithm Design (Under Grad.) – Spring 2014, Fall 2015,  **Teacher Assistant of main courses:**  • Advanced Software Engineering (Graduate) Fall 2008, Fall 2013, Fall 2014.  • Formal Modeling and Verification (Graduate) Fall 2009, Fall 2011, Fall 2012  • Advanced Algorithm Design (Graduate) Fall 2010, Fall 2011  • Internet Engineering (Under Grad.) – Spring2007, Spring 2012.  • Software Engineering (Under Grad.) – Fall 2006, Fall 2012.  • Advanced Programming (Under Grad.) – Spring 2004, Spring 2005 till Spring 2007.  • Data Structure and Algorithm Analysis (Under Grad.) – Fall 2004, Fall 2005 till Spring 2007.  **NODET High School**  **Teacher:**  • Introduction to web – Fall 2005 till Spring 2010. |
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| **International Visits** | **EECS Department, University of California at Berkeley, USA**  • Visiting Ptolemy group, Professor Edward A. Lee, March-June 2018  **Department of Computer Science, Aalborg University, Denmark**  • Visiting Kim G. Larsen, October 2016  **Department of Computer Science, RWTH Aachen University, Germany**  • Software modeling and verification (MOVES) group. Joost-Pieter Katoen, November 2014. |
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| **Research Experience** | **Computer Science Department, Reykjavik University**  • ICE-ROSE Research Team, Fall 2012- now, under the supervision of Prof. Marjan Sirjani.  **School of ECE, College of Engineering, University of Tehran**  • Formal Methods Research Lab, Summer 2003 – now, under the supervision of Prof. Marjan Sirjani and Dr. Ramtin Khosravi  **Faculty of Computer Engineering and Information Technology, Amirkabir University of Technology**  • Software Lab Research Team, Fall 2008- Fall 2010, under the supervision of Prof. Mohammadreza Razzazi.  **School of ECE, College of Engineering, University of Tehran**  • CRM Research Team, Summer 2002- Spring 2003, under the supervision of Dr. Fattaneh Taghiyareh. |
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| **Professional Skills** | • Software Development Process (Expert)  • Software Testing (Expert)  • System Performance Measurement and Analysis (Expert)  • Java Enterprise Application Tuning (Expert)  • J2ME/J2SE/J2EE Development (Expert)  • C/C++ Development (Expert)  • Web Based Application Development (Expert)  • Software Modeling in UML (Expert)  • Relational Data-Base Design (Expert) |
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| **Accomplished Project** | **Architecture Design of the Trade Engine of Tehran Stock Market. (Sep. 2017, Now)**  • Software architecture design  • Very high performance application design  • Comprehensive automatic testing solution for functional and non-functional requirements  **Afra Model Checker (Formal Model Checking) – Research Project. (Jul. 2012, Now)**  • Design and implement of model checking engine of Afra toolset, including language family compiler and code generator developments,  • Eclipse plugin and product development  • Efficient C++ programming  **Software Testing, Software Development Process, and Quality Engineering in Rayan Bourse Co. (Sep. 2016, Now)**  • Consulting on implementation and tuning of the software development processes  • Developing practices to increase the quality of the applications  • Software architecture analysis and recovery  • Enterprise application tuning  **Software Development Process and Quality Engineering in Tadbir Pardaz Co. (Sep. 2014, Now)**  • Consulting on implementation and tuning of the software development processes  • Developing practices to increase the quality of the applications  • Software architecture analysis and recovery  • Enterprise application tuning  **Performance Measurement and System Tuning (in Maxa Co. and as an independent consultant) (Sep. 2009, Now)**  • Performance measurement of enterprise applications  • Tools and processes of performance measurement  • Software architecture analysis and recovery  • Enterprise application tuning  • Participation in the following projects:  • **Rayan Bourse Co.**: Consultant in testing, adjusting software development methodology, performance evaluation, and increasing quality of the company’s products  • **Tadbir Gostar Co.**: Consultant in adjusting software development methodology, performance evaluation, and increasing quality of the company’s products  • **Samen Ertebat Asr Co.**: Performance evaluation of its currently developing core banking system  • **Rayan Eghtesad Novin Co.**: Performance evaluation, security assessment, and usability analysis of banking solution complementary systems.  • **Hafiz Co.**: Performance evaluation of banking solution complementary systems  • **Datin Ariyan Gheshm Co. (Fanap)**: Performance evaluation of its core banking system for reliable migration to a new infrastructure.  • **Iriana Consortium**: Developing required infrastructure for the consortium’s Quality Assurance Lab  • **Amn-Afzar Gostar Sharif Co.**: Performance evaluation and application tuning of certification authority (CA) solution to make it applicable for high-performance environment.  • **Dadehpardaz Tadbir Sarmayeh Co.**: Software development methodology consultancy and performance evaluation for developing high-performance stock market solutions.  • **Resalat Bank**: Consultant for choosing a core banking solution (performance evaluation, software architecture analysis, and security assessment)  • **Islamic Republic of Iran Customs Administration**: Performance evaluation of a subsystem which mostly used by the end users as the agent of University of Tehran Takna Lab.  • **Ferdowsi Financial Institution**: Consultant for choosing a core banking solution (performance evaluation, software architecture analysis, and security assessment)  • **Fanap**: Performance evaluation and system tuning of Card Management System and Transaction Switch  **IT Solutions Improvement in GSM Co. (Sep. 2008, Sep. 2011)**  • IT consultant and project management  • J2EE application design  **SystemC Model Checker (Formal Model Checking) – Research Project. (Jul. 2006, Dec. 2008)**  • Design and implement of model checking engine of Afra toolset  • Efficient C++ programming  **Mobile Digital Library for Advanced Methods in Software Engineering Lab. (Mar. 2008, Sep. 2009)**  • Object Oriented software design  • J2ME application development  • J2SE application development (In order to convert ordinary electronically books to mobile books)  • Embedded data-base system using Perst  **ERP & CRM Customization and Extension for AccTec Co. (Sep. 2007, Mar. 2008)**  • Application development consultant  • Implementation of some patches for ERP solution of AccTec Co. to customize it for the needs of Trading Center of the company  • Installation and customization of CRM solution for Customer Support Service of the company |
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| **References** | **Marjan Sirjani**  Professor  School of Computer Science, Reykjavik University, Reykjavik, Iceland  <http://www.ru.is/faculty/marjan>  School of Innovation Design and Engineering, Malardalen University, Västerås, Sweden  <http://www.es.mdh.se/staff/3242-Marjan_Sirjani>  **Ramtin Khosravi**  Assistant Professor  School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran  <http://ramtung.ir>  **Mohammadreza Razzazi**  Professor  Computer Engineering and IT Department, Amirkabir University, Tehran, Iran  <http://ceit.aut.ac.ir/~razzazi> |
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