Curriculum Vitae

Hossein Hojjat

Postdoctoral Researcher
Rigorous System Design Laboratory
School of Computer & Communications Sciences
Swiss Federal Institute of Technology (EPFL)
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Education

- **EPFL** Lausanne, Switzerland
  PhD Student *Sep. 2008 - Aug. 2013*
  - Ph.D. Dissertation: "Automatic Verification with Abstraction and Theorem Proving" under supervision of Prof. Viktor Kuncak
  - Member of ProgLab.Net project funded by Microsoft Research
  - Relevant courses (grades are out of 6): Advanced algorithms (Amin Shokrollahi-6), Logic and Automata Theory (Radu Iosif, Barbara Jobstmann-6), Problem solving in computer science (Tom Henzinger-5), Advanced topics in software analysis and verification (Viktor Kuncak-5.5), Distributed algorithms (Rachid Guerraoui-5)
- **University of Tehran** Tehran, Iran
  Msc., Software Engineering (Grades: 18.99 / 20) *Sep. 2005 - Nov. 2007*
  - Enrolled as a top student without passing the entrance examinations
  - Thesis title: "Formal verification of the object-based systems using process algebra" under supervision of Marjan Sirjani and MohammadReza Mousavi
  - Defended with honors (19.8 / 20)
  - Relevant courses: Network Security, Performance Evaluation of Computer Systems, Software Architecture, Verification of Concurrent Systems
- **University of Tehran** Tehran, Iran
  Bs. Software Engineering (Grades 17.69 / 20) *Sep. 2001 - Sep. 2005*
  - Graduated with Honors, second position
  - Relevant courses: Software Engineering, Internet Engineering, Advanced Algorithm Design,Digital Logic Circuits, Compiler Design, Advanced Software Engineering

Work Experience

- **IPM School of Computer Science** Tehran, Iran
  Student Research Assistant *Sep. 2005 - Sep. 2008*
  - Project title: Verification of network protocols
  - In the organization committee of summer and winter schools
    - Process theory - summer 2007
    - Foundations and Trends in Computer Science - winter 2008

Formal Methods Laboratory University of Tehran, Iran
Researcher and Programmer *Sep. 2005 - Sep. 2008*
- Formal verification of SystemC designs

Technische Universiteit Eindhoven Eindhoven, The Netherlands
Research Visitor *Nov. 2007 - Jan. 2008*
- Process algebraic verification of hardware systems

Niroo Research Center Tehran, Iran
Internship in IT Management *Jun. 2005 - Sep. 2005*
- Application of CRM software in a power distribution company

Reviewer & Organizing

- Member of the organizing committee in the FSEN conferences: FSEN'05 ,FSEN'07, FSEN'11 and FSEN'13
  - International Symposium of Software Engineering
- Reviewer for the conferences
  - LPAR'13,ACSD'13,VSTTE'12,SAS'11,ESOP'11

Publications

Conference Papers

- Philipp Rümmer, Hossein Hojjat, Viktor Kuncak, Classifying and Solving Horn Clauses for Verification (VSTTE'13)
- Philipp Rümmer, Hossein Hojjat, Viktor Kuncak, Disjunctive Interpolants for Horn-Clause Verification (CAV'13)
- Hossein Hojjat, Radu Iosif, Filip Konečný, Viktor Kuncak and Philipp Rümmer: Accelerating Interpolants, Proceedings of the 10th International Symposium on Automated Technology for Verification and Analysis (ATVA'12)
- Hossein Hojjat, Filip Konečný, Florent Garnier, Radu Iosif, Viktor Kuncak and Philipp Rümmer: Verification Toolkit for Numerical Transition Systems (tool paper), Proceedings of the 18th International Symposium on Formal Methods (FM'12)
- Bahman Pourvatan, Marjan Sirjani, Hossein Hojjat and Farhad Arbab: Analysis of Reo Circuits using Symbolic Execution, Proceedings of the 8th International Workshop on the Foundations of Coordination Languages and Software Architectures (FOCLASA'09)
- Hossein Hojjat, Mohammad Reza Mousavi Mousavi, Marjan Sirjani: Process Algebraic Verification of SystemC Codes, Proceedings of the 8th International Conference on Application of Concurrency to System Design (ACSD'08)
- Hossein Hojjat, Mohammad Reza Mousavi, Marjan Sirjani: A Framework for Performance Evaluation and Verification in Stochastic Process Algebras, Proceedings of the 22nd ACM Symposium on Applied Computing, Software Verification Track (SV'08)
- Hossein Hojjat, Marjan Sirjani, SMR Mousavi and Jan Friso Groote: Sarir: A $\mathcal{R}$ebeca to mCRL2 Translator, Proceedings of the 7th IEEE International Conference on Application of Concurrency to System Design (ACSD'07)

- Fahimeh Raja , Hadi Amiri , Samira Tasharofi and Hossein Hojjat and Farhad Oroumchian : Evaluation of part of speech tagging on Persian text, The Second Workshop on Computational Approaches to Arabic Script-based Languages (CAASL2'07)
- Hossein Hojjat, Hootan Nakhost, Marjan Sirjani: Formal Verification of the IEEE 802.1D Spanning Tree Protocol Using Extended Rebeca. Electr. Notes Theor. Comput. Sci. 159: 139-154 (2006)

Journal Papers

- Bahman Pourvatan, Marjan Sirjani, Hossein Hojjat and Farhad Arbab: Symbolic Execution of Reo Circuits using Constraint Automata. Science of Computer Programming, Elsevier, v. 77, n. 7-8, pp. 848-869, 2012.
- Hossein Hojjat, Mohammad Reza Mousavi, Marjan Sirjani: Formal Analysis of SystemC Designs in Process Algebra. Fundam. Inform. v. 107, n. 1, pp. 19-42, 2011.
- Hossein Hojjat, Hootan Nakhost, Marjan Sirjani: Integrating Module Checking and Deduction in a Formal Proof for the Perlman Spanning Tree Protocol (STP), J.UCS Journal of Universal Computer Science, v. 13, n. 13, pp. 2076-2104, 2007.

Technical Reports

- Hossein Hojjat, Mohammad Reza Mousavi Mousavi, Marjan Sirjani: Application of process algebraic verification and reduction techniques to SystemC designs, Computer Science Report No. 08-15, Technische Universiteit Eindhoven.

Software Development

- Main developer of Eldarica, a predicate abstraction engine.
  - `http://lara.epfl.ch/w/eldarica`
- SystemC to mCRL2 Toolkit
  - `http://www.win.tue.nl/~mousavi/sysc08`
- Sarir: Rebeca to mcrl2 translator
  - `http://ece.ut.ac.ir/FML/sarir.htm`
- Stochastic Process Algebras to mcrl2 translator
  - `http://www.win.tue.nl/~mousavi/spa`

Teaching Assistance

Undergraduate

- Introduction to Computer Programming, (Fattane Taghiyareh) : Fall 2002
- Languages and Automata Theory, (Ali Mahjur) : Fall 2003, Spring 2004.
- Artificial Intelligence, (Hesham Faili) : Spring 2004, Fall 2004.

- Advanced Computer Programming, (Hossein Sheikh Attar) : Spring 2004
- Programming Languages Design, (Marjan Sirjani) : Fall 2005
- Informatique III (SSV), (Sebastian Gerlach) : Fall 2009
- Compiler Construction , (Viktor Kuncak) : Fall 2010
- Informatique Théorique Avancée, (Gregory Theoduloz) : Spring 2011

Graduate

- Modeling and Verification of Concurrent Systems, (Marjan Sirjani) : Spring 2006, Spring 2007.
- Synthesis, Analysis, and Verification, (Viktor Kuncak) : Spring 2010