

# Hassan Khosravi

## Curriculum Vitae

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*Life is a process of becoming, a combination of states we have  
to go through. Where people fail is that they wish to elect a  
state and remain in it. - Anais Nin*

### Current Position

2013–Present **The University of British Columbia**, *Vancouver, Canada*.  
Department Computer Science  
Present Rank Full-time Lecturer

### Education

PhD

2007–2012 **Simon Fraser University**, *Vancouver, Canada*, (Overall GPA A+ 4.33/4.00).  
Ranked 1st among 200 graduate students

Department Computer Science  
Thesis Title Using Directed Models for Statistical Relational Learning  
Supervisor Dr. Oliver Schulte

M.Sc

2005–2007 **Amirkabir University of Technology**, *Tehran, Iran*, (GPA 18.5/20).  
Department Computer Science  
Thesis Title A Game Theoretic Approach to Trading Agent Competition  
Supervisor Dr. Ebrahim Shiri

B.Sc

2001–2005 **Shahid Bahonar University**, *Kerman, Iran*.  
Department Computer Science

### Research Interests

Machine Learning and Data Mining  
Social Network Analysis  
Cloud Computing and Mobile Security  
Algorithms and Game Theory

## Teaching Experience

### Courses Taught

INST	Course Number	Course Title	Material Covered
UBC	APSC 160	Introduction to Computation in Engineering Design	Introduction to C, compilers, testing and debugging, modularity, data acquisition and processing, and computer systems organization
UBC	CPSC 101	Connecting with Computer Science	Introduction to HTML, Java Scripts, computer network, HCI, digital information, digital DNA, computer hardware, and machine intelligence
SFU	CMPT 120	Introductory Programming Course in Python	Procedural programming in Python, introduction to algorithms, computability and complexity, introduction to computer architecture
UBC	CPSC 259	Data Structures and Algorithms for Electrical Engineers	Pointer and memory management, recursion, linked lists, stacks, queues, time and space complexity, priority queues, sorting, BST, graphs
UBC	CPSC 221	Basic Algorithms and Data Structures (for Computer Scientists)	ADT, linked lists, stacks, queues, priority queues, loop invariants, B+ trees, hashing, parallelism and concurrency, graphs
UBC	CPSC 260	Data Structures and Algorithms for Computer Engineers	Object oriented programming, pointers and memory management, inheritance and polymorphism, linked lists, stacks, queues, sorting, BSTs, graphs
UBC	CPSC 304	Introduction to Relational Databases	Logical database design, E-R models, SQL, datalog, normalization, logging and recovery, data warehousing, data mining
SFU	CPSC 354	Database Systems	E-R models, relational algebra and calculus, SQL, normalization, transaction processing, concurrency control, constraints and triggers, XML
SFU	CPSC 310	Artificial Intelligence Survey	AI-as search paradigm, logic, game playing, planning, reasoning under uncertainty (probability), Bayesian networks, utility theory, decision networks, learning

### Courses offered at University of British Columbia

Session	Course Number	Class Size	Number of TAs	Hours Taught / Week			
				Lectures	Tutorials	Labs	Other
2015S-T1	CPSC 304	120	6	7.5	0	0	4
2014W-T2	CPSC 221	120	10	3	0	0	3
2014W-T1	CPSC 259	218	10	3	0	0	3
2014W-T1	APSC 160	301	30	3	0	0	3
2014S-T1	CPSC 304	120	6	7.5	0	0	4
2013W-T2	APSC 160	197	24	3	0	0	2
2013W-T2	APSC 160	172	24	3	0	0	2
2013W-T1	CPSC 101	120	8	3	0	0	2
2013W-T1	CPSC 260	50	3	3	0	0	2

### Courses offered at Simon Fraser University

Session	Course Number	Class Size	Number of TAs	Hours Taught / Week			
				Lectures	Tutorials	Labs	Other
2012 Summer	CMPT 120	193	3	3	0	0	2
2012 Fall	CMPT 354	73	1	3	0	0	2
2011 Spring	CMPT 310	71	1	3	0	0	2
2010 Spring	CMPT 310	61	1	3	0	0	2

### Teaching Assistant Positions at Simon Fraser University

*Responsibilities include: holding tutorials, holding office hours, marking, attending labs*

2011 Socio-technological Issues of Computing Science, Logic Design

2009 Advanced Game Theory, Advanced Data Structure, Symbolic Computing

2008 Data Structure

2007 Logic Design

### Teaching Position at Kish Air Language Institute

2004-2005 Taught part-time as an English educator.

### Research

#### Students Supervised/co-supervised

Student Name	Program Type	year	project title
Akshat Divekar	B.Sc, UBC	2014	Use of clickers or similar practices outside classroom
Dirk Haupt	B.Sc, UBC	2014	Studying the effectiveness of screencasts in flipped lectures
Ildar Muslushkov	Ph.D. UBC	2013	Securing smartphones and tablets for BYOD management
Alireza Davoodi	M.Sc. UBC	2013	User Modeling on Smart Devices
Pariya Raoufi	M.Sc. SFU	2013	Smart device log analytics using MapReduce
Alireza Zarei	M.Sc. UBC	2012	Optimization of cloud usage on Amazon AWS
Yuke Zhu	B.Sc. SFU	2011	Modelling relational statistics with Bayes Nets using Pseudo-Likelihood
Tianxiang Gao	B.Sc. SFU	2011	Learning compact Markov Logic Networks with Decision Trees
Ali Bozorgkhan	M.Sc. SFU	2010-2012	Social network analysis

### Grants

Period	Project Title	Grant	Role	Amount
2013	Securing Smartphones and Tablets for BYOD Management	NSERC Engage	Co-wrote grant with Dr. Konstantin Beznosov and project lead	\$25,000
2013	User Modeling on Smart Devices	NSERC Engage	Co-wrote grant with Dr. Cristina Conati and project lead	\$25,000
2012	Using Cloud Computing for Disaster recovery	NSERC IRDF	Main applicant and chief designer and developer	\$60,000
2012	Using Cloud Computing for Disaster recovery	Mitacs Cluster	Co-wrote grant with Dr. Oliver Schulte and project lead	\$80,000
2012	Recovery as a Cloud Service	NSERC Engage	Co-wrote grant with Dr. Oliver Schulte and chief designer and developer	\$25,000
2011	Real-time Machine Learning for Transaction Analysis	NSERC Engage	Co-wrote grant with Dr. Oliver Schulte and chief designer and developer	\$25,000

### Presentations

date	Title	Conference	Location
2012	Modelling Relational Statistics With Bayes Nets Using Pseudo-Likelihood	International Conference on Inductive Logic Programming	Dubrovnik, <i>Croatia</i>
2012	Fast Learning of Markov Logic Networks Via Moralization	International Conference on Inductive Logic Programming	Dubrovnik, <i>Croatia</i>
2011	Learning Directed Relational Models With Recursive Dependencies	International Conference on Inductive Logic Programming	London, <i>United Kingdom</i>
2011	Learning Compact Markov Logic Networks With Decision Trees	International Conference on Inductive Logic Programming	London, <i>United Kingdom</i>
2010	Structure Learning for Markov Logic Networks with Many Descriptive Attributes	Association for the Advancement of Artificial Intelligence	Atlanta, <i>United States</i>
2011	Learning Compact Markov Logic Networks With Decision Trees	International Conference on Inductive Logic Programming	London, <i>United Kingdom</i>
2009	Virtual Joins With Nonexistent Links	International Conference on Inductive Logic Programming	London, Leuven, <i>Belgium</i>
2009	The Imap Hybrid Method for Learning Gaussian Bayes Nets <b>(Best paper award)</b>	Canadian Conference of Artificial Intelligence	Kelowna, <i>Canada</i>
2009	A Survey on Statistical Relational Learning	Canadian Conference of Artificial Intelligence	Kelowna, <i>Canada</i>
2008	Using Bayes Nets for Statistical Relational Learning based on Table Joins	Canadian Conference of Artificial Intelligence	Windsor, <i>Canada</i>

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## Professional Experience

2012–2013 **Researcher at FusionPipe Inc.**, *Vancouver, Canada.*

- Co-wrote grants with faculty members including Dr. Cristina Conati, and Dr. Konstantin Beznosov from UBC and Dr. Oliver Schulte from SFU. The sum of all of the approved grants was valued at \$130,000.
- Recruited and led a team of five researchers (one Ph.D. and four M.Sc. students) to use object-oriented design with two-week sprint cycles using agile development methods to implement an application that decouples data encryption and user authentication on tablets and smartphones. Work from our experimental development resulted in a Patent Filing with the USPTO & PCT.
- Managed a project on developing a server software method of remote data consolidation and analysis of thousands of smart devices within a MapReduce type framework.
- Led a project for designing and prototyping a framework that decouples user authentication and data encryption on tablets and smartphones. Work from our experimental development resulted in a Patent Filing with the USPTO & PCT.

2012 **Intern at FusionPipe Inc.**, *Vancouver, Canada.*

- Designed and implemented software in Python to perform disaster recovery for virtual machines using cloud computing.
- Designed and implemented a 3-way bi-synchronization and orchestration for file backup, restore and recovery methods interoperable on public clouds, private clouds, local Smartphones or PCs with minimized data transfer and interchange.

2011–2012 **Intern at INETCO Inc.**, *Vancouver, Canada.*

- Developed a system that required implementation of innovative machine learning techniques to infer the association of messages in a network with millions of transactions in seconds on stream data.

2007–2012 **Research Assistant to Dr. Oliver Schulte**, *Vancouver, Canada.*

- Supervised a team of 6 (2 graduate and 4 undergraduate) students to develop software that provides sophisticated search methods for learning directed causal and statistical models on propositional and relational data. The results of this project were published as four papers in the premium Journal of Machine Learning.

2004–2005 **Intern at International Center of Science** , *Kerman, Iran.*

- Prototyped an agent that uses a game theoretical approach to compete in on-line auctions that are NP-complete by nature. This work was later extended to become my Masters thesis.

2002–2003 **Programmer in Kerman Systems** , *Kerman, Iran.*

- Received the best programmer with new ideas award.

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## Awards

**NSERC Industrial Research & Development Postdoctoral Fellowship** - \$30,000, received in 2012, 2013

- The IRDF provides financial support to encourage excellent recent PhD graduates in science and engineering to seek careers in the Canadian private sector.

**Graduate Fellowship (PhD) Funding Award** - \$6250, received in 2012, 2011, 2009

- The Graduate Fellowship is awarded by the Senate of Graduate Awards Adjudication Committee on the recommendations of the Departmental Graduate Program Committee.

**Ebco/Eppich Scholarships** - \$700, received in 2011, 2008

- The Ebco/Eppich Graduate Scholarships is awarded by Simon Fraser University to the best research ideas in the field of Intelligent Systems. Departmental nominations are submitted to the Dean of Graduate Studies before a final decision is made.

**President's PhD Stipend (PS) Award** - \$6250, received in 2010

- The President's PhD Scholarship rewards PhD students who have made excellent progress in their degree, and who have demonstrated academic excellence, substantial scholarly output and leadership early in their PhD program relative to their peers.

**Modelling of Complex Social Systems Scholarship** - \$8000, received in 2009

- Modelling of Complex Social Systems Scholarship is awarded to graduate students that have demonstrated academic excellence to collaborate with MoCSSy, which is an interdisciplinary research and training program at SFU with joint efforts between Computing Science, Criminology, Geography, Health Sciences, Mathematics, and Statistics.

## Service to the University

### Departmental Committees at UBC

2013-present Undergrad Student Services, Member

- Advise students on course planning, academic success, and graduation requirements.
- Represented the Computer Science Department in the British Columbia Computing Education Committee (BCCEC) articulation meeting, 2013 and 2014
- Represented the Computer Science Department at Faculty of Science's "Beyond First Year" event 2013.
- Represented the Computer Science Department at Faculty of Arts "Imagine day" event 2014.

2013-present Outreach, Member

- Coordinated the UBC-EA Digital Media Job Expo event with Donald Acton for 250 grades 10 to 12 students
- Coordinated the Experience Science Day event for 80 grade 4 to 7 students

2013-2014 Student Development, Member

- Mentored four students in the Tri-Mentoring program.
- Coordinated the ACM regional contest event with Will Evans at UBC in 2013.
- Represented the Computer Science Department on selecting Undergraduate Student Research Awards 2014.

### Committees and Associations at SFU

2008-2010 Computer Science Graduate Student Association, President

2008-2009 Graduate Issue Committee, Member

2007 Computer Science Graduate Student Association, Vice President

- Committees and Associations at Amirkabir University of Technology
- 2005-2006 Computer Science and Mathematics Graduate Student Association, Vice President
- Committees and Associations at Shahid Bahonar University
- 2003 Computer Science and Mathematics Student Association, Member
- 2003 Journal of Computer Science Association, Editor

## Computer Skills

- Programming C++, Objective-C, Java, Python
- Web HTML, JavaScript, JSP
- Database MySQL, MS SQL
- $\text{\LaTeX}$

## Patents and Publications

### Patents

- [1] **Hassan Khosravi**, Ildar Muslukhov, Peter Luong. Method and system for decoupling user authentication and data encryption on mobile devices. U.S. Patents 13/943070, July 2013.

### Journal Publications

- [1] Oliver Schulte, **Hassan Khosravi**, Arthur KirkPatrick, TianXiang Gao, and Yuke Zhu. Modelling relational statistics with bayes nets. *Journal of Machine Learning*, 94: 105-125, 2014.
- [2] **Hassan Khosravi**, Oliver Schulte, Jianfeng Hu, and Tianxiang Gao. Learning compact markov logic networks with decision trees. *Journal of Machine Learning*, 89:257–277, 2012.
- [3] Oliver Schulte and **Hassan Khosravi**. Learning graphical models for relational data via lattice search. *Journal of Machine Learning*, 88:331–368, 2012.
- [4] Oliver Schulte, **Hassan Khosravi**, and Tong Man. Learning directed relational models with recursive dependencies. *Journal of Machine Learning*, 89:299–316, 2012.
- [5] L. Bakker, W. Hare, **Hassan Khosravi**, and B. Ramadanovic. A social network model of investment behaviour in the stock market. *Physica A: Statistical Mechanics and its Applications*, November 2009.

### Peer Reviewed Conferences

- [1] **Hassan Khosravi**. Fast parameter learning for Markov Logic Networks using bayes nets. To appear in 22nd Conference on Inductive Logic Programming (ILP), 2013.
- [2] **Hassan Khosravi**, Ali Bozorgkhan, and Oliver Schulte. Transaction-based link strength prediction in an on-line social network. *IEEE Symposium Series on Computational Intelligence (SSCI)*, 2013.
- [3] **Hassan Khosravi**, Oliver Schulte, Jianfeng Hu, and Tianxing Gao. Learning compact markov logic networks with decision trees. 21st Conference on Inductive Logic Programming (ILP), volume 7207, pages 21–26, 2011.

- [4] Oliver Schulte, **Hassan Khosravi**, and Tong Man. Learning directed relational models with recursive dependencies. 21st Conference on Inductive Logic Programming (ILP), 7207:21–26, 2011.
- [5] **Hassan Khosravi**, Oliver Schulte, Tong Man, Xiaoyuan Xu, and Bahareh Bina. Structure learning for Markov logic networks with many descriptive attributes. Proceedings of the Twenty-Fourth Conference on Artificial Intelligence (AAAI), pages 487–493, 2010.
- [6] **Hassan Khosravi** and Bahareh Bina. A survey on statistical relational learning. Canadian Conference on AI, pages 256–268, 2010.
- [7] Oliver Schulte, Gustavo Frigo, Russell Greiner, and **Hassan Khosravi**. The IMAP hybrid method for learning gaussian bayes nets. Canadian Conference on AI, pages 123–134, 2010.
- [8] **Hassan Khosravi** and Recep Colak. Exploratory analysis of co-change graphs for code refactoring. Canadian Conference on AI, pages 219–223, 2009.
- [9] **Hassan Khosravi**, Oliver Schulte, and Bahareh Bina. Virtual joins with nonexistent links. 19th Conference on Inductive Logic Programming (ILP), 2009. URL = <http://www.cs.kuleuven.be/~dtai/ilp-mlg-srl/papers/ILP09-39.pdf>.
- [10] **Hassan Khosravi**, Ebrahim Shiri, Hamid Khosravi, Ehsan Iranmanesh, and Alireza Davoodi. Tactic-a multi behavioral agent for trading agent competition. Advances in Computer Science and Engineering, Communications in Computer and Information Science, volume 6 of Lecture Notes in Computer Science, pages 811–815. Springer, 2009.
- [11] Oliver Schulte, Gustavo Frigo, Russell Greiner, and **Hassan Khosravi**. A new hybrid method for Bayesian network learning with dependency constraints. Proceedings IEEE Symposium on Computational Intelligence and Data Mining (CIDM), pages 53–60, 2009.
- [12] **Hassan Khosravi**, Ebrahim Shiri, Hamid Khosravi, and Ehsan Iranmanesh. An automated negotiation technique for self-interest agents. 12th International Computer Science and Information Conference (CSI), 2006.

#### Workshops

- [1] Oliver Schulte, **Hassan Khosravi**, Tianxiang Gao and Yuke Zhu. Random Regression for Bayes Nets Applied to Relational Data. UAI-StarAI Workshop on Statistical-Relational AI, 2012
- [2] Oliver Schulte, **Hassan Khosravi**, and Bahareh Bina. Bayes nets for combining logical and probabilistic structure. Proceedings STRUCK Workshop on Learning Structural Knowledge From Observations in IJCAI-09, 2009.
- [3] Oliver Schulte, **Hassan Khosravi**, Bahareh Bina, and Flavia Moser. Join Bayes nets: A new type of Bayes net for relational data. Proceedings GKR Workshop on Graph Structures for Knowledge Representation and Reasoning in IJCAI-09, pages 19–24, 2009.

#### Technical Reports

- [1] Oliver Schulte, **Hassan Khosravi**, Flavia Moser, and Martin Ester. Join Bayes nets: A new type of Bayes net for relational data. Technical Report 2008-17, Simon Fraser University, 2008.