

## CURRICULUM VITAE

# Amirreza Masoumzadeh

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Department of Computer Science,  
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## EDUCATION

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- Ph.D., Information Science, Aug. 2014  
· University of Pittsburgh, Pittsburgh, PA
- M.Sc., Computer Engineering – Software, Jan. 2007  
· Sharif University of Technology, Tehran, Iran
- B.Sc., Computer Engineering – Software, Sep. 2004  
· Ferdowsi University of Mashhad, Mashhad, Iran

## PROFESSIONAL APPOINTMENTS

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- Assistant Professor, Sep. 2015–Present  
· Department of Computer Science, University at Albany – State University of New York, Albany, NY
- Assistant Professor, Sep. 2014–Aug. 2015  
· Department of Informatics, University at Albany – State University of New York, Albany, NY

## RESEARCH INTERESTS

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My research interests revolve around information security, privacy, and trust in modern information systems. I am interested in developing theories and mechanisms for protecting information in complex systems such as online social networks and for enabling data sharing while preserving user privacy. In addition to the theories in the security domain, I am inspired by the work in formal methods, knowledge representation and reasoning, data mining, and information system design among others. More specific areas of interest include, but not limited to:

- Access Control Policies and Mechanisms: Modeling, Verification, and Testing
- Privacy in Online Social Networks
- Privacy in Sharing/Publishing Social Network Data and Location Data

## RESEARCH EXPERIENCE

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- Co-Director, *Albany Lab for Privacy and Security (ALPS)*  
Computer Science Dept., SUNY Albany Aug. 2016–Present
- Research Assistant, *Laboratory for Education and Research on Security Assured Information Systems (LERSAIS)*  
iSchool, University of Pittsburgh Aug. 2007–Aug. 2014
  - Contributed primarily as a research assistant to the NSF-CAREER Award IIS-0545912: A Trust-based Access Control Management Framework for Secure Information Sharing and Multimedia Workflows in Heterogeneous Environments.

- Researched access control models for privacy in social networking systems: Proposed a novel ontology-based access control model and policy analysis approach. Implemented prototypes in Java, Jena framework, and Protégé-OWL.
  - Researched anonymization of social network datasets: Proposed approaches to preserve data utility in  $k$ -anonymization algorithms for social networks, and new  $k$ -anonymization algorithms for geosocial networks. Implemented algorithms and analyzed real-world and synthetic social network datasets in Java and R.
  - Researched privacy in location-based services: Proposed an alternative approach to anonymizing location-based service requests. Implemented algorithms in Java.
  - Researched access control models in several contexts including secure multi-domain information sharing, enforcement of privacy policies, and security of multi-agent systems.
  - Contributed to several research grant proposals in areas such as trustworthy social networking, secure and privacy-enhanced vehicular networks, and secure personalized information retrieval.
  - Mentored student projects in the area of privacy for social networking systems.
- Research Assistant, *Sharif Data & Network Security Laboratory*  
Computer Engineering Dept., Sharif University of Technology Jun. 2005–May 2007
    - Researched modeling access control policies and conflict management in context-aware applications.
    - Reviewed and inspected design and implementation of a role-based access control framework for Java applications.
  - Research Assistant, *Nexus Robosoccer Simulation Lab*  
Computer Engineering Dept., Ferdowsi University Sep. 2002–Aug. 2004
    - Participated in development of a robosoccer simulation team employing machine learning and heuristic techniques.

## TEACHING EXPERIENCE

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- *Information Security* (undergraduate/graduate), Computer Science Dept., SUNY Albany Fall 2016
- *Information Security and Privacy* (undergraduate/graduate), Informatics Dept., SUNY Albany Spring 2016
- *Information and Computing* (PhD), Informatics Dept., SUNY Albany Fall 2015
- *Prevention and Protection Strategies in Cybersecurity* (undergraduate/graduate), Informatics Dept., SUNY Albany Spring 2015
- *Introduction to Web Technologies* (undergraduate), Informatics Dept., SUNY Albany Fall 2014
- *Network Security* (undergraduate), iSchool, University of Pittsburgh Spring 2013

## TEACHING ASSISTANT

- *Data Mining* (graduate), iSchool, University of Pittsburgh Spring 2014
- *Computer Security* (undergraduate), iSchool, University of Pittsburgh Fall 2013
- *Introduction to Security* (graduate), iSchool, University of Pittsburgh Fall 2008–2012
- *Research Design* (doctoral), iSchool, University of Pittsburgh Fall 2011

## GUEST LECTURES

- Information Privacy, Cryptography course, Computer Science Dept., SUNY Albany Spring 2016
- Information Privacy, Introduction to Security course, iSchool, University of Pittsburgh Fall 2010–2013
- A Brief Introduction to Information Security and Privacy, iSchool Inclusion Institute of Information Sciences (i3) workshop Jun. 6, 2011

- Information Security Lab, as a part of a one-day lecture on information security, School of Health and Rehabilitation Sciences, University of Pittsburgh Summer 2010–2012

## AWARDS AND HONORS

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- **University at Albany Faculty Research Award**, “Towards a Comprehensive Privacy Control Policy Analysis Solution for Social Networking Environments” May 2015–Apr. 2017
- University at Albany Early Career Institute Grant Jan. 2015
- Scholarship to attend 2013 *IEEE Symposium on Security and Privacy* May 2013
- **Catherine Ofiesh Orner Award** (1st place winner) for the paper on *Preserving Structural Properties in Network Perturbation Techniques* iSchool, University of Pittsburgh Apr. 2013
- Scholarship to attend *IAPP Global Privacy Summit 2013* Mar. 2013
- **MODAP Best Student Paper Award** for the paper on *Anonymizing Geo-Social Networks* Nov. 2011
- Scholarship to attend *ITI Cyber Security for Process Control Systems Summer School* Jun. 2008
- Iran Telecommunications Research Center Grant for M.Sc. Thesis May 2006
- Ranked 1st, National Soccer Simulation Competition, 5th Conference on Intelligent Systems, Ferdowsi University, Mashhad, Iran Oct. 2003
- 11th Place, 28th ACM International Collegiate Programming Contest, Asia Region, Tehran Site Nov. 2003

## PUBLICATIONS

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### JOURNAL PAPERS

- [1] A. Masoumzadeh and J. Joshi. Top Location Anonymization for Geosocial Network Datasets. *Transactions on Data Privacy*, 6(1):107–126, 2013.
- [2] A. Masoumzadeh and J. Joshi. Preserving Structural Properties in Edge-Perturbing Anonymization Techniques for Social Networks. *IEEE Transactions on Dependable and Secure Computing*, 9(6):877–889, Nov. 2012. ISSN: 1545-5971.
- [3] Y. Jung, M. Kim, A. Masoumzadeh, and J. B. D. Joshi. A survey of security issue in multi-agent systems. *Artificial Intelligence Review*, 37(3):239–260, June 2012. ISSN: 0269-2821.
- [4] A. Masoumzadeh and J. Joshi. Ontology-based access control for social network systems. *International Journal of Information Privacy, Security and Integrity (Special Issue: Selected Papers from PASSAT 2010)*, 1(1):59–78, Jan. 2011.

### BOOK CHAPTERS

- [5] M. Anwar, A. Masoumzadeh, and J. Joshi. Security and Privacy in Location Based Services. In H. A. Karimi, editor, *Advanced Location-Based Technologies and Services*, pages 235–264. CRC Press, 2013.

### CONFERENCE AND WORKSHOP PAPERS

- [6] A. Masoumzadeh. Security Analysis of Relationship-Based Access Control Policies. In *ACM Conference on Data and Applications Security and Privacy (to Appear)*, 2018.
- [7] Andrew Cortese and Amirreza Masoumzadeh. Modeling Exposure in Online Social Networks. In *Proc. Privacy, Security and Trust 2017 (PST 2017)*, 2017.
- [8] A. Masoumzadeh and A. Cortese. Towards Measuring Knowledge Exposure in Online Social Networks. In *Workshop on Privacy in Collaborative & Social Computing (PiCSoc 2016)*, pages 522–529, 2016.

- [9] A. Masoumzadeh. Inferring Unknown Privacy Control Policies in a Social Networking System. In *Proc. 14th ACM Workshop on Privacy in the Electronic Society (WPES '15)*, pages 21–25. ACM, 2015.
- [10] A. Masoumzadeh and J. Joshi. Privacy Settings in Social Networking Systems: What You Cannot Control. In *Proc. 8th ACM Symposium on Information, Computer and Communications Security (ASIACCS 2013)*, pages 149–154. ACM Press, May 2013.
- [11] A. Masoumzadeh and J. Joshi. Anonymizing geo-social network datasets. In *Proceedings of the 4th ACM SIGSPATIAL International Workshop on Security and Privacy in GIS and LBS - SPRINGL '11*, 25–32 (Best Student Paper). ACM Press, 2011.
- [12] A. Masoumzadeh and J. Joshi. An Alternative Approach to k-Anonymity for Location-Based Services. In *Proc. 8th Int'l Conference on Mobile Web Information Systems (MobiWIS 2011)*, volume 5 of *Procedia Computer Science*, pages 522–530, Jan. 2011.
- [13] N. Baracaldo, A. Masoumzadeh, and J. Joshi. A secure, constraint-aware role-based access control interoperation framework. In *Proc. 5th Int'l Conference on Network and System Security (NSS)*, pages 200–207. IEEE, 2011.
- [14] A. Masoumzadeh and J. Joshi. OSNAC: An Ontology-based Access Control Model for Social Networking Systems. In *Proc. 2nd IEEE Int'l Conference on Information Privacy, Security, Risk and Trust (PASSAT 2010)*, pages 751–759, Minneapolis, MN, USA, Aug. 2010.
- [15] A. Masoumzadeh and J. Joshi. Preserving structural properties in anonymization of social networks. In *Proc. 6th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom)*, pages 1–10. IEEE, Oct. 2010.
- [16] A. Masoumzadeh and J. Joshi. PuRBAC: Purpose-aware Role-Based Access Control. In *Proc. On The Move To Meaningful Internet Systems (OTM'08)*, volume 5332 of *LNCS*, pages 1104–1121, Monterrey, Mexico. Springer, 2008.
- [17] Y. Jung, A. Masoumzadeh, J. Joshi, and M. Kim. RiBAC: Role Interaction Based Access Control Model for Community Computing. In E. Bertino and J. Joshi, editors, *Proc. CollaborateCom '08*, volume 10 of *LNCS*, pages 304–321. Springer Berlin Heidelberg, 2009.
- [18] A. Masoumzadeh, M. Amini, and R. Jalili. Conflict Detection and Resolution in Context-Aware Authorization. In *Proc. 21st Int'l Conference on Advanced Information Networking and Applications Workshops (AINAW '07)*, pages 505–511, Niagara Falls, Canada, 2007.
- [19] A. Masoumzadeh, M. Amini, and R. Jalili. Context-Aware Provisional Access Control. In *Proc. Int'l Conference on Information Systems Security*, volume 4332 of *LNCS*, pages 132–146, Kolkata, India. Springer Verlag, 2006.

#### POSTERS (SHORT PAPERS)

- [20] A. Masoumzadeh, L. Jin, J. Joshi, and R. Constantino. HELPP Zone: Towards Protecting College Students from Dating Violence. In *iConference 2013 Proceedings*, pages 925–928, 2013.
- [21] A. Masoumzadeh, J. Joshi, and H. A. Karimi. LBS (k, T)-anonymity: a spatio-temporal approach to anonymity for location-based service users. In *Proc. 17th ACM SIGSPATIAL Int'l Conference on Advances in Geographic Information Systems (GIS'09)*, pages 464–467, Seattle, Washington. ACM, 2009.

#### THESES

- [22] A. Masoumzadeh. *Preserving Privacy in Social Networking Systems: Policy-Based Control and Anonymity*. PhD thesis, University of Pittsburgh, 2014.
- [23] A. Masoumzadeh. *Context-Aware Provisional Access Control*. PhD thesis, Sharif University of Technology, 2007.

- [24] A. Masoumzadeh and S. H. Shahri. *Using Reinforcement Learning in Control Applications*. PhD thesis, Ferdowsi University, 2004.

## OTHER PUBLICATIONS

- [25] A. Masoumzadeh and J. Joshi. Anonymizing Geo-Social Network Datasets. *MODAP (Mobility, Data Mining, and Privacy) Newsletter*, 3(2):3, Nov. 2011.

## INVITED TALKS

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- “Inferring Unknown and Inconsistent Privacy Control Policies in a Social Networking System,” Computer Science Colloquium at SUNY Albany, Oct. 6, 2015
- “Structure-Preserving Anonymization of Social Networks,” Computer Science Seminar Series at Union College, May 14, 2015
- “Access Control & Anonymity in Information Systems,” Informatics Brown Bag Series at SUNY Albany, Sep. 24, 2014
- “Preserving Privacy in Social Networking Systems: Policy-Based Control and Anonymity,” CMU Usable Privacy and Security Lunch Seminars, May 15, 2013

## UNIVERSITY SERVICE

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- Graduate Committee, Computer Science Dept. Spring 2016–Present
- Student Grievance Committee Chair, Computer Science Dept. Spring 2016
- Big Data Policy Workgroup, SUNY Albany Fall 2015–Spring 2016
- Faculty Search Committee, Informatics Dept. Fall 2014–Spring 2015
- Student Grievance Committee, College of Computing and Information Fall 2014

## PROFESSIONAL SERVICE

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- Grant Proposal Panelist
  - National Science Foundation – Secure and Trustworthy Cyberspace (SaTC) Program (2015)
- Organizing Committee
  - Program Co-Chair, Workshop on Privacy in Collaborative & Social Computing (PiCSoc 2016)
  - Publication Chair, IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2015–2017)
  - Industry/Govt. Track Co-Chair, IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2017)
  - Publication Chair, IEEE International Conference on Information Reuse and Integration (IEEE IRI 2016)
  - Publicity Chair, International Conference on Collaborative Computing (CollaborateCom 2013–2014)
  - Webmaster, International Conference on Collaborative Computing (CollaborateCom 2008–2012)
- Program Committee
  - AAAI Fall Symposium on Privacy and Language Technologies (PLT 2016)
  - Annual Symposium on Information Assurance (ASIA 2015–2017)
  - IEEE International Conference on Big Data (BigData 2016–2017)
  - IEEE International Conference on Collaboration and Internet Computing (CIC 2015–2017)
  - IEEE International Conference on Collaborative Computing (CollaborateCom 2014)
  - IEEE International Conference on Information Reuse and Integration (IRI 2017)

- IEEE International Workshop on Privacy Issues in Multimedia (PIM 2016)
- IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA 2016)
- International Workshop on Privacy and Anonymity in Information Society (PAIS 2015–2017)
- Journal Reviewer
  - ETRI (Electronics and Telecommunications Research Institute) Journal
  - IEEE Transactions on Big Data (TBD)
  - IEEE Transactions on Dependable and Secure Systems (TDSC)
  - IEEE Transactions on Information Forensics and Security (TIFS)
  - IEEE Transactions on Parallel and Distributed Systems (TPDS)
  - IEEE Transactions on Services Computing (TSC)
  - IET Information Security
  - International Journal of Cooperative Information Systems (IJCIS)
  - International Journal of Security and Networks (IJSN)
  - Transactions on Data Privacy
- External Reviewer
  - ACM GIS International Workshop on Security and Privacy in GIS and LBS (SPRINGL)
  - ACM International Conference on Web Search and Data Mining (WSDM)
  - ACM Symposium on Access Control Models and Technologies (SACMAT)
  - ACM Transactions on Information and System Security (TISSEC)
  - IEEE International Conference on Advanced Information Networking and Applications (AINA)
  - IEEE Internet Computing Magazine
  - IEEE Signature Conference on Computer Software and Applications (COMPSAC)
  - IEEE Transactions on Dependable and Secure Systems (TDSC)
  - IEEE Transactions on Knowledge and Data Engineering (TKDE)
  - IEEE Transactions on Parallel and Distributed Systems (TPDS)
  - IEEE/IFIP International Symposium on Trust, Security and Privacy for Pervasive Applications (TSP)
  - IFIP International Conference on Trust Management (IFIPTM)
  - International Conference on Collaborative Computing (CollaborateCom)
  - International Conference on Web Information System Engineering (WISE)
  - International Symposium on Foundations & Practice of Security (FPS)
  - International World Wide Web Conference Workshops (WWW)
  - Journal of Computers and Security
  - Journal of Systems and Software
- Student Volunteer
  - Symposium on Access Control Models and Technologies (SACMAT 2010)
  - International Conference on Collaborative Computing (CollaborateCom 2010, 2012)
- ACM & IEEE member 2009–Present

## INDUSTRIAL EXPERIENCE

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- *Software Engineer*, Peykasa Messageware, Tehran, Iran Feb. 2007–Jul. 2007
  - Analyzed and inspected designs of software systems for mobile messaging center solutions. Used Rational Rose and Eclipse environments.
- *Senior Software Developer*, Toos Resaneh-Pardaz, Mashhad, Iran Jul. 2000–Apr. 2004
  - Designed and developed several software systems/packages: personal accounting system, adminis-

trative automation system, online food ordering system, Khorasan province multimedia guide, and multimedia catalogs for various industrial companies. Programmed in several programming languages including C++, Delphi, ASP, and ASP.NET (C#).

## TECHNICAL SKILLS

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- Programming Languages: C/C++, C#, Java, Pascal, Python, R
- Web Development: ASP, ASP.NET, CSS, HTML, JavaScript, PHP, XML, XSLT
- Tools: ArcGIS, Gephi, NetLogo, ORA, Protégé-OWL, Pajek, SPSS, Weka

## EXTRA CURRICULAR ACTIVITIES

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- *Vice-President*, Doctoral Guild, iSchool, University of Pittsburgh 2009–2010
- *Business Manager*, International Student Organization, iSchool, University of Pittsburgh 2008–2009