

Reihaneh Rabbany

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CURRENT POSITION **Postdoctoral Fellow** *November 2016 - present*
The Auton Lab, School of Computer Science, Carnegie Mellon University

RESEARCH INTERESTS Data Mining, Network Science, Artificial Intelligence, Applied Machine Learning,
Analyzing Interrelated Data, Attributed and Heterogeneous Graphs, Dynamic Networks

EDUCATION **PhD in Computing Science** *September 2016*

Department of Computing Science, University of Alberta, Canada

Funding: Alberta Innovates Centre for Machine Learning

Thesis: **Modular Structure of Complex Networks**

Supervisor: Osmar R. Zaïane

Committee: Dale Schuurmans, Mohammad Salavatipour, Jörg Sander, and Martin Ester

MSc in Computing Science *August 2010*

Department of Computing Science, University of Alberta, Canada

Thesis: Community Mining and its Applications in Educational Environments

Supervisor: Osmar Zaïane

BSc in Computer Engineering *August 2007*

Department of Computer Engineering and IT, Amirkabir University of Technology, Iran

Ranked first in the software engineering graduating class

REFEREED JOURNAL ARTICLE J1. A. Abnar, M. Takaffoli, R. Rabbany, and O. R. Zaïane, “SSRM: structural social role mining for dynamic social networks”, *Social Network Analysis and Mining Journal (SNAM)*, 5(1): 1869-5450, Springer, Sep. 2015.
J2. R. Rabbany, O. R. Zaïane, “Generalization of Clustering Agreements and Distances for Overlapping Clusters and Network Communities”, *Data Mining and Knowledge Discovery (DAMI)*, 29(5): 1458-1485, Springer, Jul. 2015.
J3. C. Llargeron, P-N. Mougél, R. Rabbany, O. R. Zaïane, “Generating Attributed Networks with Communities”, *Public Library of Science (PLoS ONE)* 10(4), Apr. 2015.
J4. R. Rabbany, M. Takaffoli, J. Fagnan, O. R. Zaïane, and R. Campello, “Communities Validity: Methodical Evaluation of Community Mining Algorithms”, *Social Network Analysis and Mining (SNAM)*, 3(4): 1039-1062, Springer, Oct. 2013.

REFEREED BOOK CHAPTERS B1. R. Rabbany, O. R. Zaïane, “Evaluation of Community Mining Algorithms in the Presence of Attributes”, *Trends and Applications in Knowledge Discovery and Data Mining, LNCS* 9441: 152-163, Springer, Nov. 2015.
B2. R. Rabbany, S. ElAtia, M. Takaffoli, O. R. Zaïane, “Collaborative Learning of Students in Online Discussion Forums: A Social Network Analysis Perspective”, *Educational Data Mining: Applications and Trends, in Studies in Computational Intelligence Series*, 524: 441-466, Springer, Nov. 2014.

- B3. R. Rabbany, M. Takaffoli, J. Fagnan, O. R. Zaïane, and R. Campello, “*Relative Validity Criteria for Community Mining Algorithms*”, *Encyclopedia of Social Network Analysis and Mining*, 1562-1576, Springer, Oct. 2014.

REFEREED
CONFERENCE
PAPERS

- P1. R. Rabbany, D. Eswaran, A. W. Dubrawski, C. Faloutsos, “*Beyond Assortativity: Proclivity Index for Attributed Networks (PRONE)*”, *Proceedings of the Pacific Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, May 2017. *Invited to special issue of Data Science and Analytics (JDSA) journal (PAKDD selected papers)*.
- P2. R. Rabbany, O. R. Zaïane, “*A General Clustering Agreement Index: for Comparing Disjoint and Overlapping Clusters*”, *Thirty-First AAAI Conference on Artificial Intelligence (AAAI)*, Feb 2017.
- P3. J. Fagnan, R. Rabbany, M. Takaffoli, E. Verbeek, O. R. Zaïane, “*Community Dynamics: Event and Role Analysis in Social Network Analysis*”, *Proceedings of the 10th International Conference on Advanced Data Mining and Applications (ADMA)*, LNCS 8933: 85-97, Dec 2014.
- P4. S. Ravanbakhsh, R. Rabbany, R. Greiner, “*Augmentative Message Passing for Traveling Salesman Problem and Graph Partitioning*”, *Proceedings of the Advances in Neural Information Processing Systems (NIPS)*, pp. 289-297, Dec. 2014.
- P5. M. Takaffoli, R. Rabbany, O. R. Zaïane, “*Community Evolution Prediction in Dynamic Social Networks*”, *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)* , pp. 9-16, Aug. 2014.
- P6. A. Abnar, M. Takaffoli, R. Rabbany, O. R. Zaïane, “*SSRM: Structural Social Role Mining for Dynamic Social Networks*”, *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, pp. 289-296, Aug. 2014. *Invited to Social Network Analysis and Mining (SNAM) journal by Springer (ASONAM best papers)*.
- P7. M. Takaffoli, R. Rabbany, O. R. Zaïane, “*Incremental Local Community Identification in Dynamic Social Networks*”, *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, pp. 90-94, Aug. 2013. *Invited to Social Network Analysis and Mining (SNAM) journal by Springer (ASONAM best papers)*.
- P8. R. Rabbany, M. Takaffoli, J. Fagnan, O. R. Zaïane, and R. Campello , “*Relative Validity Criteria for Community Mining Algorithms*”, *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, pp. 258-265, Aug. 2012. *Invited to appear in the Encyclopedia of Social Network Analysis and Mining (ESNAM) by Springer*.
- P9. R. Rabbany , E. Stroulia and O. R. Zaïane, “*Web Service Matching for RESTful Web Services*”, *Proceedings of the 13th IEEE International Symposium on Web Systems Evolution (WSE)*, pp. 115-124, Sep. 2011.
- P10. R. Rabbany, M. Takaffoli and O. R. Zaïane, “*Analyzing Participation of Students in Online Courses Using Social Network Analysis Techniques*”, *Proceedings of the 4th International Conference on Educational Data Mining (EDM)*, pp. 21-30, Jul. 2011. *Invited to special issue of SIGKDD Explorations Newsletter*.

REFEREED
WORKSHOP
PAPERS

- W1. R. Rabbany, O. R. Zaïane, “*Evaluation of Community Mining Algorithms in the Presence of Attributes*”, *Proceedings of the 4th International Workshop on Quality issues, Measures of Interestingness and Evaluation of Data Mining Models (QIMIE) at the 19th Pacific Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, May 2015. *Invited to appear in an edited book by Springer (PAKDD best papers)*.
- W2. R. Rabbany, S. ElAtia, O. R. Zaïane, “*Mining Large Scale Data from National Educational Achievement Tests: A Case Study*”, *Proceedings of the workshop on Data Mining for Educational Assessment and Feedback (ASSESS) at the ACM SIGKDD conference on Knowledge Discovery and Data Mining (KDD)*, Aug. 2014.
- W3. R. Rabbany and O. R. Zaïane, “*A Diffusion of Innovation-Based Closeness Measure for Network Associations*”, *Proceedings of the Workshop on Mining Communities and People Rec-*

- ommenders (COMMPER) at the IEEE International Conference on Data Mining (ICDM), pp. 381-388, Dec. 2011.
- W4. R. Rabbany, J. chen and O. R. Zaïane, “*Top Leaders Community Detection Approach in Information Networks*”, Proceedings of the 4th SNA-KDD Workshop on Social Network Mining and Analysis at the ACM SIGKDD conference on Knowledge Discovery and Data Mining (KDD), Jul. 2010.
- OTHER REFEREED PUBLICATIONS
- O1. R. Rabbany, D. Eswaran, C. Faloutsos, A. W. Dubrawski, “*Proclivity Patterns in Attributed Graphs*”, SIAM Workshop on Network Science (NS17), July 2017. Workshop Abstract.
- O2. J. Chen, J. Fagnan, R. Goebel, R. Rabbany, F. Sangi, M. Takaffoli, E. Verbeek and O. R. Zaïane, “*Meerkat: Community Mining with Dynamic Social Networks*”, Proceedings of the IEEE International Conference on Data Mining (ICDM), pp. 1377-1380, 2010. Demo Paper.
- INVITED ARTICLE
- I1. R. Rabbany, M. Takaffoli and O. R. Zaïane, “*Social Network Analysis and Mining to Support the Assessment of Online Student Participation*”, ACM SIGKDD Explorations Newsletter, 13 (2): 20-29, 2011.
- INVITED TALKS
- T1. Modular Structure of Complex Networks, Auton Lab, Carnegie Mellon University, July 2016
- T2. What Is a Network Community?, GSC Seminar, University of Alberta, Nov 2015
- T3. Community Mining: Performance and Evaluation of Community Mining Algorithms, Goldenberg Lab, SickKids Research Institute, July 2013
- T4. Enhancement of Learning Experience in Udacity, Digital Learning Pilots’ R&D Meetings, University of Alberta, May 2013
- T5. Communities Validity: Methodical Evaluation of Community Mining Algorithms, AI Seminar, University of Alberta, Feb 2013
- T6. MeerkatED: Analyzing Interactions in Discussion Threads of Online Courses, Udacity, April 2013
- TEACHING EXPERIENCE
- Graduate Teaching Assistant**, University of Alberta, Canada *Fall 2008 - Winter 2009*
 Courses: Programming with Data Structures, Introduction to Computing
- Teaching Assistant**, Amirkabir University of Technology, Iran *Fall 2005 - Winter 2007*
 Courses: Multimedia Systems, Principles of Compiler Design, Design of Algorithms, Data Structure and Algorithms, Principles of Computer and Programming
- Instructor**, Ministry of Education, Iran *Fall 2006*
 Course: Fundamental of Computer Programming
- SERVICE & OUTREACH ACTIVITIES
- Organizing Committee**, for
 The Broadening Participation in Data Mining Workshop *2017*
 The ACM SIGKDD 2017 Conference on Knowledge Discovery and Data Mining
- Session Organizer**, for
 CIPS annual Women In Technology Program *2013 & 2014*
 University of Alberta, Canada
 session on “Introduction to Social Network Analysis” for grade 9 girls
 Women in Scholarship, Engineering, Science & Technology Conference *2012 & 2013*
 University of Alberta, Canada
 session on “Social Programming Analysis with Facebook and Gephi” for grade 12 girls
- Reviewer** (mostly external) for
 KDD, ICDM, AAAI, Canadian AI, and CIKM conferences, TKDE and SNAM journals, ICDM Data Mining in Networks, and WWW MSND workshops

AWARDS & HONORS	Invited to Rising Stars in EECS: Academic Career Workshop for Women	2016
	Invited to Women In Machine Learning Workshop	2014
	NIPS Conference Travel Grant	2014
	Computing Science GPA Award , University of Alberta	2014
	Professional Development Awards, University of Alberta	2014
	Queen Elizabeth II Graduate Scholarship , Canada	2014
	SIAM SDM Travel Award (declined)	2013
	Invited to CRA-W Grad Cohort Workshop	2013
	Queen Elizabeth II Graduate Scholarship , Canada	2013
	Professional Development Award, University of Alberta	2011
	IBM Student Travel Award, ICDM Conference	2011
	Honor Graduate , invited to MSc program & national entrance exam waived	2007
	Honorable Mention, Regional ACM-ICPC	2005
	Ranked 10 th & Best Women Team, Regional ACM-ICPC	2004
	Honor Student , Society of Exceptional Talents, Amirkabir University	2003
	Ranked top 0.1% in the Iran's national university exam	2003

REFERENCES

Osmar R. Zaiane

McCalla - Killam Professor *Office:* ATH 443 (Athabasca Hall)
 Computing Science Department *E-mail:* zaiane@cs.ualberta.ca
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Artur W. Dubrawski

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Christos Faloutsos

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