

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, Large-Scale Real-World Graphs, Unsupervised, Semi-supervised & Active Learning with Interconnected Data
- EDUCATION **PHD IN COMPUTING SCIENCE** September 2016
Department of Computing Science, University of Alberta, Canada
Member of: Alberta Innovates Centre for Machine Learning
Thesis: *Modular Structure of Complex Networks*
Supervisor: Osmar R. Zaiane
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 Zaiane
- BSC IN COMPUTER ENGINEERING** August 2007
Department of Computer Engineering, Amirkabir University of Technology, Iran
Ranked first in the software engineering graduating class
- REFEREED CONFERENCE PAPERS [C1] R. Rabbany, David Bayani, A. W. Dubrawski, *RedThread: Active Search of Connections for Case Building and Combating Human Trafficking Online*, Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), Aug 2018. ([research track, acceptance rate of 18%](#))
- [C2] 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), pp. 225-237, May 2017. ([long presentation, acceptance rate of 28%](#))
- [C3] R. Rabbany, O. R. Zaiane, *A General Clustering Agreement Index: for Comparing Disjoint and Overlapping Clusters*, Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI), pp. 2492-2498, Feb 2017. ([oral presentation, acceptance rate of 25%](#))
- [C4] J. Fagnan, R. Rabbany, M. Takaffoli, E. Verbeek, O. R. Zaiane, *Community Dynamics: Event and Role Analysis in Social Network Analysis*, Proceedings of the 10th International Conference on Advanced Data Mining and Applications (ADMA), pp. 85-97, Dec 2014.
- [C5] 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. ([poster presentation, acceptance rate of 25%](#))

- [C6] 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. (long presentation, acceptance rate of 18%)
- [C7] 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. (long presentation, acceptance rate of 18%)
- [C8] 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. (short paper, cited by 28)
- [C9] 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. (full paper, acceptance rate of 16%, cited by 23)
- [C10] 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. (full paper)
- [C11] 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. (full paper, oral presentation, acceptance rate of 25%, cited by 75)

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. (extended version of [C7])
- [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. (journal track article presented in the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD))
- [J3] C. Langeron, P-N. Mougel, 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. (extended version of [C9])

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. (extended version of [W2])
- [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. (extended version of [C11], cited by 37)
- [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 & 2018. (living reference work based on [C9])

REFEREED
WORKSHOP
PAPERS

- [W1] [R. Rabbany](#), David Bayani, A. W. Dubrawski, *Active Link Inference for Case Building Investigation*, NIPS workshop on Advances in Modeling and Learning Interactions from Complex Data (AMLICD), Dec 2017.
- [W2] [R. Rabbany](#), O. R. Zaïane, *Evaluation of Community Mining Algorithms in the Presence of Attributes*, PAKDD workshop on Quality issues, Measures of Interestingness and Evaluation of Data Mining Models (QIMIE), May 2015.
- [W3] [R. Rabbany](#), S. ElAtia, O. R. Zaïane, *Mining Large Scale Data from National Educational Achievement Tests: A Case Study*, KDD workshop on Data Mining for Educational Assessment and Feedback (ASSESS), Aug. 2014.
- [W4] [R. Rabbany](#) and O. R. Zaïane, *A Diffusion of Innovation-Based Closeness Measure for Network Associations*, ICDM workshop on Mining Communities and People Recommenders (COMMPER), Dec. 2011.
- [W5] [R. Rabbany](#), J. chen and O. R. Zaïane, *Top Leaders Community Detection Approach in Information Networks*, KDD workshop on Social Network Mining and Analysis (SNA-KDD), Jul. 2010. (acceptance rate of 30%, cited by 94)

OTHER
REFEREED
PUBLICATIONS

- [P1] [R. Rabbany](#), D. Eswaran, C. Faloutsos, A. W. Dubrawski, *Proclivity Patterns in Attributed Graphs*, SIAM Workshop on Network Science (NS17), July 2017. ([workshop abstract](#))
- [P2] 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. (based on [C11] featured in the special section on Educational Data Mining as a significant contribution in analyzing student behavior, cited by 35)

INVITED
TALKS

- [T1] Mining Connections, Dept. of Computing Science, University of Alberta, March 2018
- [T2] Mining Connections, AI Seminar, Carnegie Mellon University, Feb 2018
- [T3] Modular Structure of Complex Networks, Auton Lab, Carnegie Mellon University, July 2016
- [T4] What Is a Network Community? GSC Seminar, University of Alberta, Nov 2015
- [T5] Community Mining: Performance and Evaluation of Community Mining Algorithms, Goldenberg Lab, SickKids Research Institute, July 2013
- [T6] Enhancement of Learning Experience in Udacity, Digital Learning Pilots' R&D Meetings, University of Alberta, May 2013
- [T7] Communities Validity: Methodical Evaluation of Community Mining Algorithms, AI Seminar, University of Alberta, Feb 2013
- [T8] MeerkatED: Analyzing Interactions in Discussion Threads of Online Courses, Udacity, April 2013

TEACHING
EXPERIENCE

- GUEST LECTURER**, Carnegie Mellon University, USA Winter 2018
Applied Data Science Course: lecture on Analyzing Inter-connected Data
- GUEST LECTURER**, Carnegie Mellon University, USA Fall 2017
Special Topics Course on Computing for Good: introductory lecture on Network Science

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 (special topic course for highschool students)

SERVICE &
 OUTREACH
 ACTIVITIES

ORGANIZING COMMITTEE, The Broadening Participation in Data Mining Workshop 2017
 at the ACM SIGKDD 2017 Conference on Knowledge Discovery and Data Mining (KDD)

SESSION ORGANIZER, annual Women In Technology (WIT) Program 2013 & 2014
 by Canadian Information Processing Society (CIPS), University of Alberta
 session on Introduction to Social Network Analysis for grade 9 girls

ACTIVITY LEADER, annual Science, Engineering and Technology (SET) Conference 2012 & 2013
 by Women in Scholarship, Engineering, Science & Technology (WISET), University of Alberta
 session on Social Programming Analysis with Facebook and Gephi for grade 12 girls

REVIEWER, IEEE Transactions on Knowledge and Data Engineering (TKDE), Applied Network Science (APNS) and Social Network Analysis and Mining(SNAM) journals 2013-2018

EXTERNAL REVIEWER, KDD, ICDM, AAAI, Canadian AI, and CIKM conferences 2012-2017

AWARDS &
 HONORS

- Invited to Women In Machine Learning Workshop 2017
- **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 10th & Best Women Team, Regional ACM-ICPC 2004
- Honor Student, Society of Exceptional Talents, Amirkabir University 2003

REFERENCES

Osmar R. Zaiane
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Artur W. Dubrawski

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Last modified: 2018/05/14