

REIHANEH RABBANY

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Carnegie Mellon University
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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. 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, Amirkabir University of Technology, Iran
Ranked first in the software engineering graduating class
- REFEREED CONFERENCE PAPERS
- [C1] D. Eswaran, [R. Rabbany](#), A. W. Dubrawski, C. Faloutsos, *Social-Affiliation Networks: Patterns and the SOAR Model*, Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD), Sep 2018. (acceptance rate of 26%)
 - [C2] [R. Rabbany](#), David Bayani, A. W. Dubrawski, *Active Search of Connections for Case Building and Combating Human Trafficking*, Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), Aug 2018. (research track, acceptance rate of 18%)
 - [C3] [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%)
 - [C4] [R. Rabbany](#), O. R. Zaïane, *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%)
 - [C5] 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), pp. 85-97, Dec 2014.

- [C6] 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%)
- [C7] 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%)
- [C8] 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%)
- [C9] 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)
- [C10] 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)
- [C11] 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)
- [C12] 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 76)

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 [C8])
- [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. 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. (extended version of [C10])

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 [C12], 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 \[C10\]](#))

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 95](#))

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 \[C12\]](#) 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, AI Seminar, Carnegie Mellon University, Feb 2018
- [T2] Modular Structure of Complex Networks, Auton Lab, Carnegie Mellon University, July 2016
- [T3] What Is a Network Community? GSC Seminar, University of Alberta, Nov 2015
- [T4] Community Mining: Performance and Evaluation of Community Mining Algorithms, Goldenberg Lab, SickKids Research Institute, July 2013
- [T5] Enhancement of Learning Experience in Udacity, Digital Learning Pilots' R&D Meetings, University of Alberta, May 2013
- [T6] Communities Validity: Methodical Evaluation of Community Mining Algorithms, AI Seminar, University of Alberta, Feb 2013
- [T7] 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: Analyzing Inter-connected Data
- GUEST LECTURER, Carnegie Mellon University, USA Fall 2017
Special Topics Course on Computing for Good: Introduction to 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
Special Topic Course: Fundamentals of Computer Programming 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 (WISSET), 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, AAI, 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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University of Alberta

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