

# Dr. Rodica Neamtu

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*Associate Teaching Professor Computer Science and Data Science, WPI*

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## RESEARCH INTERESTS

- o **Data mining and machine learning:** interactive similarity exploration, clustering, identification, classification, multi-label learning.
- o **Big Data analytics:** mining large scale heterogeneous information sources.
- o **Information Retrieval and Integration:** integrating heterogeneous data sources, automated data extraction, automated data integration.

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## EDUCATION

- 2014–2017 **Worcester Polytechnic Institute**, Worcester, MA, PhD Computer Science, *April 2017*.
- 1990–1991 **University of Craiova**, Craiova, Romania, MS Computer Science.
- 1986–1990 **University of Craiova**, Craiova, Romania, BS Computer Science and Electrical Engineering.

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## PhD DISSERTATION

- title *Interactive Exploration of Time Series Powered by Time Warped Distances*
- supervisors Prof. Elke Rundensteiner (WPI), Prof. Gabor Sarkozy (WPI), Prof. Sam Madden (MIT)

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## EMPLOYMENT

### TEACHING and ADVISING

- Aug 2017–Present **Associate Teaching Professor Computer Science and Data Science**, *Worcester Polytechnic Institute*, Worcester.  
Teaching database classes.  
Conducting research in data mining with undergraduate and graduate students.  
TA coordinator for the CS department.
- Jan–Sept 2014 **Teaching Assistant**, *WPI*, Worcester.  
Actively involved in teaching, advising, mentoring graduate and undergraduate students.  
Leading a collaborative project with a group of 11 graduate and undergraduate students for implementing and hosting a data discovery system.  
Leading 5 undergraduate students in completing Interactive Quality Projects resulting in fully implemented systems, user studies and published short research papers.  
Courses: Algorithms, Discrete Math, Foundations of Computer Science, Social issues in computing.
- Sept–Dec 2013 **Adjunct Professor**, *Wentworth Institute of Technology*, Boston.  
Teaching Foundations of Computer Science and Networking classes  
Involved in preparation of the introduction a new Master's degree.

- Sept2005–Aug 2013 **Lecturer**, *Emmanuel College*, Boston.  
 Leadership role in designing and implementing a rigorous Information Technology program involving the design of the three upper-level courses available in the Information Technology academic department.  
 Major contributions to the design of a Minor in Information Technology and its successful implementation over the years. Collaborated with students in developing individualized majors at Emmanuel College and advised them throughout their education.  
 Actively engaged in designing and deploying the first online summer program at EC.  
 Faculty Coordinator of the Computer Literacy Program: responsible for initiatives to creatively integrate technology into the educational process, redefining the role of technology in the context of a liberal arts institution.
- Oct 2010–Oct 2012 **Consultant**, *Sloan C International Consortium*.  
 Designed and taught online workshops for faculty and administrators in higher education institutions as part of the online certification program offered by the consortium.
- Dec 1999–Sept 2005 **Adjunct Professor**, *Emmanuel College*, Boston.  
 Designed three online courses and took a leadership role in assessing the use of information technology in graduate and undergraduate programs; contributed to the creation of a new approach in teaching technology across the curriculum.  
 Taught management of information systems courses in graduate and undergraduate divisions.
- Sept 1991–Dec 1995 **Assistant Professor**, *University of Craiova*, Romania.  
 Taught courses at undergraduate and graduate degree level, including: databases, algorithms and foundations of computer science.

## RESEARCH

- Sept 2014–April 2017 **Research Assistant**, *WPI*, Worcester.  
 Research in Big Data information retrieval and integration, Data modeling and mining, Data discovery.  
 Managed a team of diverse students to design and implement a dynamic, searchable dashboard for quick and intuitive analysis of the key factors that drive Massachusetts' cost and talent competitiveness compared with peer states across metrics relevant to high tech companies. This MATTERS project is now used by Mass. High Tech Council and governmental agencies. Actively participated in research groups, gave talks, worked with undergraduate students to help them prepare Interactive Qualitative Projects, short research papers and posters.

## OTHER PROFESSIONAL APPOINTMENTS

- Oct 2000–Feb 2001 **Senior Project Manager**, *Brown University*, Providence, RI.  
 Jun 1996–Oct 1999 **Database Administrator and Project Manager**, *Curry College*, Milton.

## PUBLICATIONS

### Selected recent publications:

- [1] R Neamtu, R. Ahsan, E Rundensteiner, G Sarkozy. Interactive Time Series Exploration Powered by the Marriage of Similarity Distances. In Proceedings of VLDB, Very Large Databases 2017. Vol. 10. No. 3. Endowment 2150-8097/16/11.
- [2] R Neamtu, R. Ahsan, C. Lovering, C. Nguyen, E Rundensteiner, G Sarkozy. Interactive Time Series Analytics Powered by ONEX. In Proceedings of SIGMOD2017. ACM 2017.
- [3] C Nguyen, Ch Lovering, R Neamtu. Ranked Time Series Matching by Interleaving Similarity Distances. In Proceedings of 4th Workshop on Advances in Software and Hardware for Big Data Science (ASH2017), Big Data Boston, 2017.

[4] R Ahsan, R Neamtu, and E Rundensteiner. Towards spreadsheet integration using entity identification driven by a spatial-temporal model. In Proceedings of the 31st Annual ACM Symposium on Applied Computing, pages 1083–1085. ACM, 2016.

[5] R Ahsan, R Neamtu, and E Rundensteiner. Using entity identification and classification for automated integration of spatial-temporal data. In International Journal of Design Nature and Ecodynamics, 11(3):186–197, 2016.

[6] R Neamtu et. all. "Taming Big Data: Integrating diverse public data sources for economic competitiveness analytics." In Proceedings of the First International Workshop on Bringing the Value of Big Data to Users (Data4U 2014). ACM, 2014.

[7] R Ahsan, R Neamtu, et. all. METIS: Massachusetts economy and technology index system. In Proceedings of ACM SIGMOD 2014.

[8] R Neamtu, R Ahsan and E Rundensteiner. The impact of Big Data on making evidence-based decisions. Book chapter in Frontiers in Data Science. September 30, 2017 Forthcoming by CRC Press Reference - 450 Pages - 50 B/W Illustrations ISBN 9781498799324 - CAT K30579 Series: Chapman and Hall CRC Big Data Series.

[9] R Neamtu. Crossroads of the digital and real worlds: virtual field trips for online and blended courses. In Proceedings of ICERI2011, pages 2243–2251, 2011.

#### **Manuscripts under review:**

[10] R Neamtu, et. all. Generalized Dynamic Time Warping: Unleashing the Warping Power Hidden in Point-to-Point Distances. Submitted to Proceedings of ACM SIGMOD 2017.

[11] R Neamtu, et. all. Efficient knowledge discovery in time series datasets powered by multiple distances. Submitted to Proceedings of SIGKDD 2017.

#### **Other professional publications:**

[12] R Neamtu. The never ending battle: how to convince the skeptics that OL is OK. In Proceedings of Sloan C National Conference on Online Education, 2010.

[13] R Neamtu. Starting a Summer Online Program: From the Unthinkable to the Indispensable. In Proceedings of Sloan C International Conference on online education, 2010.

[14] R Neamtu. Quality slices: stakeholders views: introducing online courses in a very small traditional catholic college. In Proceedings of Quality in motion, NUTN conference, 2009.

[15] R Neamtu. Appealing to the digital natives: using multimedia, VoIP and portfolios to enhance the classroom environment. In Proceedings of Sloan C International Symposium on emerging technologies in online education, 2008.

[16] R Neamtu. E-portfolios: working with digital natives. In proceedings of NERCOMP conference on "E-portfolios: breakthroughs and quandaries", March 28, 2008.

[17] R Neamtu. Appealing to the digital natives: using digital stories and e-portfolios in the classroom. In Proceedings of COF conference on "Digital natives/digital immigrants: teaching and learning in a new era of technology", October 25-26, 2007.

[18] R Neamtu. Using VoIP and technology to accommodate diversity in the classroom. In Proceedings of

New England Center for Inclusive Teaching (NECIT), October 13, 2007.

[19] R Neamtu. Over the summer: strategies for pioneering an online summer program. Online Workshop, Sloan C International Consortium, 2012.

[20] R Neamtu. Getting started in online teaching: starting an online summer program. Online Workshop, Sloan C International Consortium, 2011.

[21] R Neamtu. Emerging technologies to improve online learning, Workshop for faculty in Graduate and Professional Programs. Emmanuel College, 2008.

[22] R Neamtu. Enriching the dialogue in cyberspace, Workshop, Emmanuel College, 2008.

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## SELECTED AWARDS, HONORS, INVITED TALKS AND PROFESSIONAL MEMBERSHIPS

- Best Poster Award at the ACM Symposium on Applied Computing 2016.
- Best Poster Award in the Graduate Research Innovation Exchange poster competition at PhD level at WPI 2015.
- Finalist for the 2015 CRA-E Graduate Fellowship Program.
- Invited speaker to the Women in Machine Learning Workshop 2015.
- Invited speaker to the North East Database Day 2016, MIT.
- Invited speaker at Student Training and Readiness Session Students (STARS) - Cultural preparation for new graduate students and mentorship panel 2016.
- Lecture series at the Boston Showa Institute on the use of technology to empower women from diverse cultures in today's global society 2013.
- Member of the Sigma Xi Research Society.
- Member of the Upsilon Pi Epsilon Honor Society for the Computing and Information Disciplines.
- Active contributor to the CRA-W and CRA-E organizations.
- Several travel awards including CRA-W 2015, WiML2015, WiML2016.

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## REVIEWER ACTIVITIES

- Women in Machine learning Workshop 2016.
- 2017: International Conference on Information in Business and Technology Management, Recent Research in Engineering and Sciences, Advanced Research on Applied Mathematics in Science and Engineering, Game Physics and Mechanics International Conference, Borneo International conference on Digital Content.
- 2016: Applied Mathematics in Science and Engineering International Conference, Progress in Computer Sciences and Information Technology International Conference, Advanced Research on Business, Management and Humanities, International Conference on Business, Economics, Management, Social Sciences, Art and Humanities Advanced Research in Engineering and Information Technology International Conference, Advancement on Informatics, Business and Management International Conference, Education in Science, Technology and Social Science World Conference, Progress in Applied Mathematics in Science and Engineering, Advanced Research in Electronic Engineering and Information Technology International Conference

- 2015: International Symposium on Social Sciences, Arts and Humanities.
- Other review boards: EDULEARN (International Conference on Education and New Learning Technologies), 2012 IEEE Symposium on Green Technology and Systems, 2013 IEEE Business, Engineering & Industrial Applications Colloquium.

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## SERVICE AND COMMUNITY OUTREACH

- WPI campus wide committee awarding the Denise Nicoletti Award for Service to Community 2015.
- Served as chair of the Faculty Affairs Senate subcommittee at Emmanuel College from 2008 until 2010 Served in college-wide committees involved in writing policies and procedures to update the Faculty Handbook, new academic evaluation procedures, family leave act, writing across the curriculum.
- Designed and taught a service learning course at Emmanuel College where students volunteered their computer skills to Julie's Family Center, 123 Parker Neighborhood Center, Sisters of Notre-Dame Community Education Center.
- Several hiring committees at Emmanuel College.
- Medway Community Education, local library, offering tutorials to help patrons with information literacy.

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## REFERENCES

- Dr. Elke A. Rundensteiner. Professor, Computer Science, Director Data Science  
Worcester Polytechnic Institute  
Email: rundenst@cs.wpi.edu  
Phone: (508) 831-5815
- Dr. Gabor Sarkozy. Professor, Computer Science  
Worcester Polytechnic Institute  
Email: gsarkozy@cs.wpi.edu  
Phone: 508-831-5408
- Dr. Samuel Madden. Professor, EECS, Director BigData@CSAIL and Co-director of the Intel Science and Technology Center (ISTC) in Big Data.  
Massachusetts Institute of Technology  
Email: madden@csail.mit.edu  
Phone: (617)258-6643
- Dr. Kathleen Soles. Professor, Art  
Emmanuel College  
Email: soles@emmanuel.edu  
Phone: 617-429-4724
- Dr. Matthew Elliot. Associate Professor, English, Chair of English Department  
Emmanuel College  
Email: elliotma@emmanuel.edu  
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