

# Ali Tosyali, PhD

Department of Management Information Systems, Marketing, and Analytics  
Saunders College of Business  
Rochester Institute of Technology  
Rochester, NY 14623

Email: [atosyali@saunders.rit.edu](mailto:atosyali@saunders.rit.edu) | Web: <https://alitosyali.github.io>

EMPLOYMENT	<b>Assistant Professor of MIS (tenure-track)</b> RIT – MIS, Marketing, and Analytics <b>Assistant Professor of MIS (nontenure-track)</b> University of Delaware – Accounting and MIS <b>Lecturer</b> Rutgers Business School – MSIS	<i>Aug 2021 – Present</i> <i>Aug 2019 – Aug 2021</i> <i>Jan 2017 – Jun 2019</i>
EDUCATION	<b>Rutgers, The State University of New Jersey</b> Ph.D. in Industrial & Systems Engineering M.S. in Industrial & Systems Engineering <b>Turkish Military Academy</b> B.S. in Business Administration and Management	<i>Piscataway, NJ</i> <i>2019</i> <i>2016</i> <i>Ankara, Turkey</i> <i>2013</i>
RESEARCH INTERESTS	<i>Method Area:</i> Network Science, Machine Learning, Complex Systems, Optimization <i>Application Area:</i> Business Analytics, Financial Services Analytics, Social Network Analysis, Opinion Mining and Analysis	
PUBLICATIONS	<b>Journals (published/accepted)</b> J1. Tutun, S., <u>Tosyali, A.</u> , Sangrody, H., Khasawneh, M., Johnson, M., Albizri, A., & Harfouche, A. (2022). Artificial intelligence in energy industry: forecasting electricity consumption through cohort intelligence & adaptive neural fuzzy inference system. <i>Journal of Business Analytics</i> , 1-18. J2. Yu, Y., <u>Tosyali, A.</u> , Baek, J., & Jeong, M. K. (2022). A Novel Similarity-Based Link Prediction Approach for Transaction Networks. <i>IEEE Transactions on Engineering Management</i> . J3. <u>Tosyali, A.</u> , & Tavakkol, B. (2021). A node-based index for clustering validation of graph data. <i>Annals of Operations Research</i> , 1-25. J4. <u>Tosyali, A.</u> , Choi, J., Kim, B., Lee, H., & Jeong, M. K. (2021). A dynamic graph-based approach to ranking firms for identifying key players using inter-firm transactions. <i>Annals of Operations Research</i> , 303(1), 5-27. J5. <u>Tosyali, A.</u> , Song, R., Guo, W. G., Abolhassani, A., & Kalamdani, R. (2021). Data-Driven Gantry Health Monitoring and Process Status Identification Based on Texture Extraction. <i>Journal of Computing and Information Science in Engineering</i> , 21(1). J6. <u>Tosyali, A.</u> , Kim, J., Choi, J., Kang, Y., & Jeong, M. K. (2020). New node anomaly detection algorithm based on nonnegative matrix factorization for directed citation networks. <i>Annals of Operations Research</i> , 288(1), 457-474. J7. Choi, J., <u>Tosyali, A.</u> , Kim, B., Lee, H. S., & Jeong, M. K. (2022). A novel method for identifying competitors using a financial transaction network. <i>IEEE Transactions on Engineering Management</i> , 69(4), 845-860.	

- J8. Tosyali, A., Kim, J., Choi, J., & Jeong, M. K. (2019). Regularized asymmetric nonnegative matrix factorization for clustering in directed networks. *Pattern Recognition Letters*, 125, 750-757.
- J9. Rodriguez, A., Tosyali, A., Kim, B., Choi, J., Lee, J. M., Coh, B. Y., & Jeong, M. K. (2016). Patent clustering and outlier ranking methodologies for attributed patent citation networks for technology opportunity discovery. *IEEE Transactions on Engineering Management*, 63(4), 426-437.
- J10. Sevim, C., Ekiyor, A., & Tosyali, A. (2016). As a supply chain financing source, trade credit and bank credit relationship during financial crises from clustering point of view. *International Business Research*, 9(4), 45-57.

#### **Working Papers**

1. *Detecting fake review buyers using network structure: Direct evidence from Amazon* (with Sherry He, Brett Hollenbeck, Gijs Overgoor, and Davide Proserpio)
  - Presented at Johnson School of Management (Cornell), Ross School of Business (University of Michigan), Saunders College of Business (RIT), and Temple AI Workshop (Temple), AI in Management Workshop (USC)
2. *Influential user identification on online social networks* (with Salih Tutun and Behnam Tavakkol)
  - Presented at Saunders College of Business (RIT) and POMS 2022
3. *Robust asymmetric nonnegative matrix factorization* (with Yi Yu, Jaeseung Baek, and Myong K. Jeong)
4. *Influential patent identification in patent citation networks* (with Jeongsub Choi and Myong K. Jeong)

#### **Refereed Conference Proceedings**

B. Tavakkol and A. Tosyali. Density-based clustering validation of uncertain data objects. In *2020 Northeast Decision Sciences Institute Annual Meeting*.

M. Usta and A. Tosyali. Characterization of model-based uncertainties in incompressible turbulent flows by machine learning. In *ASME 2018 International Mechanical Engineering Congress and Exposition*.

#### **PRESENTATIONS**

##### **Presentations/Talks**

- "Nonnegative matrix factorization on graphs."  
University of Nevada, Reno, NV, 2022
- "Link prediction in inter-firm transaction networks."  
*Rochester Institute of Technology*, Rochester, NY, 2020  
*Iowa State University*, Ames, IA, 2020  
*University of Tulsa*, Tulsa, OK, 2020  
*Mercer University*, Macon, GA, 2020
- "Ranking outliers in patent citation network using attribute and graph structure."  
*INFORMS Annual Meeting*, 2015.

#### **TEACHING**

##### **MIS, Marketing, and Analytics**, Rochester Institute of Technology

- MGIS650: Introduction to Data Analytics and Business Intelligence
- MGIS355: Business Intelligence
- BANA255: Data Literacy & Analytics (Scheduled)

##### **Accounting and Management Information Systems**, University of Delaware

- MISY225: Introduction to Programming Business Applications
- MISY262: Fundamentals of Business Analytics (*Course coordinator*)
- MISY367: Social Network Analysis (*Designed the course*)

**Management Science and Information Systems, Rutgers Business School**

- Business Decision Analytics under Uncertainty
- Operations Management
- Statistical Methods in Business
- Management Information Systems
- Data Analysis and Decision Making
- Analytics for Business Intelligence

**SERVICES**

**Reviewer**

*Journals*

- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Cybernetics (CYB)
- IEEE Transactions on Engineering Management (TEM)
- Annals of Operations Research (ANOR)
- Journal of Manufacturing Systems (SMEJMS)
- Quality and Reliability Engineering International (QRE)

*Conferences*

- International Conference on Information Systems (ICIS)

**HONORS &  
AWARDS**

2019 – **Excellence in Teaching and Leadership** (nominated), Rutgers University, NJ  
2019 – **Outstanding Doctoral Student Award** (nominated), Rutgers University, NJ  
2013 – **Science Award**, Turkish Armed Forces, Turkey  
2013 – **Full Scholarship**, including tuition and monthly stipend, Ministry of National Defense, Turkey  
2012 – **Academic Excellency**, 11<sup>th</sup> Hwarang Collegiate Forum, South Korea  
2012 – **Creativity Award**, 11<sup>th</sup> Hwarang Collegiate Forum, South Korea

**SKILLS**

**Programming Languages and Tools:** Python, R, MATLAB, SQL, Tableau, LaTeX, yEd, Gephi  
**Spoken Languages:** Turkish (native), English (fluent)  
**Extracurricular Activities:** Racquetball, mountain biking, baglama (a folkloric instrument), electric guitar, snowboarding, soccer