

Ali Tosyali, PhD

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EMPLOYMENT	Assistant Professor of MIS (tenure-track) RIT – MIS, Marketing, and Analytics Assistant Professor of MIS (nontenure-track) University of Delaware – Accounting and MIS Lecturer Rutgers Business School – MSIS	<i>Aug 2021 – Present</i> <i>Aug 2019 – Aug 2021</i> <i>Jan 2017 – Jun 2019</i>
EDUCATION	Rutgers, The State University of New Jersey Ph.D. in Industrial & Systems Engineering M.S. in Industrial & Systems Engineering	<i>Piscataway, NJ</i> <i>2019</i> <i>2016</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	Journals (published/accepted) 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. <u>Tosyali, A.</u> , Kim, J., Choi, J., & Jeong, M. K. (2019). Regularized asymmetric nonnegative matrix factorization for clustering in directed networks. <i>Pattern Recognition Letters</i> , 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), Temple AI Workshop (Temple), AI in Management Workshop (USC), and SCECR 2022
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)
5. *True Sparse PCA for Reducing the Number of Essential Sensors in Virtual Metrology* (with Yifan Xie, Tianhui Want, Young-Seon Jeong, 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

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)
- IEEE Transactions on Network Science and Engineering
- Omega
- Annals of Operations Research (ANOR)
- Journal of Manufacturing Systems (SMEJMS)
- Quality and Reliability Engineering International (QRE)

Conferences

- International Conference on Information Systems (ICIS)

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