Ali Tosyali, PhD

Assistant Professor of Management Information Systems
Saunders College of Business
Rochester Institute of Technology
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EMPLOYMENT

Rochester Institute of Technology   Aug 2021 - Present
Assistant Professor of MIS (*tenure-track*)

University of Delaware   Aug 2019 - Aug 2021
Assistant Professor of MIS (*nontenure-track*)

Rutgers, The State University of New Jersey   Jan 2017 - June 2019
Part-time Lecturer

EDUCATION

Rutgers, The State University of New Jersey   Piscataway, NJ
Ph.D. in Industrial and Systems Engineering   2019
MS in Industrial and Systems Engineering   2016

Turkish Military Academy   Ankara, Turkey
BS in Systems Engineering (minor: Business Administration)   2013

PUBLICATIONS

Research Interests
Method Area: Network Science, Machine Learning, Complex Systems, Artificial Intelligence
Application Area: Digital Platforms, Financial Services Analytics, Social Network Analysis, Opinion Mining and Analysis, Healthcare Analytics

Journals (published/accepted)

1. He, S., Hollenbeck, B., Overgoor, G., Proserpio, D., & Tosyali, A. (2022). Detecting fake review buyers using network structure: Direct evidence from Amazon. *Proceedings of the National Academy of Sciences*, 119(47)[1]

2. Tutun, S., Tosyali, A., 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. *Journal of Business Analytics*, 1-18.

3. Yu, Y., Tosyali, A., Baek, J., & Jeong, M. K. (2022). A Novel Similarity-Based Link Prediction Approach for Transaction Networks. *IEEE Transactions on Engineering Management*.

4. Tosyali, A., & Tavakkol, B. (2021). A node-based index for clustering validation of graph data. *Annals of Operations Research*, 1-25.

5. Tosyali, A., 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. *Annals of Operations Research*, 303(1), 5-27.

6. Tosyali, A., Song, R., Guo, W. G., Abolhassani, A., & Kalamdani, R. (2021). Data-Driven Gantry Health Monitoring and Process Status Identification Based on Texture Extraction. *Journal of Computing and Information Science in Engineering*, 21(1).

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[1]Author names are listed in alphabetical order.

7. Tosyali, A., Kim, J., Choi, J., Kang, Y., & Jeong, M. K. (2020). New node anomaly detection algorithm based on nonnegative matrix factorization for directed citation networks. *Annals of Operations Research*, 288(1), 457-474.

8. Choi, J., Tosyali, A., Kim, B., Lee, H. S., & Jeong, M. K. (2022). A novel method for identifying competitors using a financial transaction network. *IEEE Transactions on Engineering Management*, 69(4), 845-860.

9. 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.

10. 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.

11. 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. MDscan: An explainable artificial intelligence algorithm for mental health screening (with Tutun, S., Topuz, K., Li, G., & Bhattacherjee, A.)

2. Competitor identification in transaction networks (with Yu, Y., Baek, J., & Choi, J.)

3. Local influential user identification on online social networks (with Tutun, S., Tavakkol, B., Oztekin, A., & TalaeiKhoei, M.)

4. Robust asymmetric non-negative matrix factorization for clustering nodes in directed networks (with Yu, Y., Baek, J., & Jeong, M. K.)

5. True sparse PCA for reducing the number of essential sensors in virtual metrology (with Xie, Y., Wang, T., Jeong, Y. S., & Jeong, M. K.)

Conference Proceedings and Presentations

(* presenting author)

1. He, S., Hollenbeck, B., Overgoor, G., Proserpio, D., & Tosyali, A.* "Detecting fake review buyers using network structure: Direct evidence from Amazon." *INFORMS 2022*

2. Tutun, S.*, Topuz, K., Li, G., & Bhattacherjee, A. "MDscan: An explainable artificial intelligence algorithm for mental health screening." *INFORMS 2022*

3. He, S., Hollenbeck, B., Overgoor, G.*, Proserpio, D., & Tosyali, A. "Detecting fake review buyers using network structure: Direct evidence from Amazon." *SCECR 2022*

4. Yu, Y.*, Tosyali, A., Baek, J., & Jeong, M. K. "A novel similarity-based link prediction approach for transaction networks." *INFORMS 2020*.

5. Tavakkol, B.* & Tosyali, A. "Density-based clustering validation of uncertain data objects." *Northeast Decision Sciences Institute Annual Meeting 2020*

6. Usta, M.* & Tosyali, A. "Characterization of model-based uncertainties in incompressible turbulent flows by machine learning." *ASME IMECE 2018*.

7. Rodriguez, A., Tosyali, A.*, Kim, B., Choi, J., Lee, J. M., Coh, B. Y., & Jeong, M. K. "Patent clustering and outlier ranking methodologies for attributed patent citation networks for technology opportunity discovery." *INFORMS 2015*

TEACHING

Saunders College of Business, RIT
MGIS650: Introduction to Data Analytics and Business Intelligence
MGIS355: Business Intelligence
BANA255: Data Literacy, Analytics & Decision Making

Lerner College of Business & Economics, University of Delaware
MISY225: Introduction to Programming Business Applications
MISY262: Fundamentals of Business Analytics (*Course coordinator*)
MISY367: Social Network Analysis (*Designed the course*)

Rutgers Business School, Rutgers University
Business Decision Analytics under Uncertainty
Operations Management
Statistical Methods in Business
Management Information Systems
Data Analysis and Decision Making
Analytics for Business Intelligence

SERVICE

Ad-hoc reviewer: *IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Cybernetics, IEEE Transactions on Engineering Management, IEEE Transactions on Network Science and Engineering, Omega, Annals of Operations Research, Journal of Manufacturing Systems, Quality and Reliability Engineering International, International Conference on Information Systems*

SELECTED MEDIA COVERAGE

Scammers Are Flooding Amazon With Fake Reviews For Popular Holiday Gifts	Dec 12, 2022
Forbes	
Inside the Underground Market for Fake Amazon Reviews	Nov 2, 2022
WIRED	
To Spot Fake Online Reviews, Target the Reviewers	Oct 5, 2022
UCLA Anderson Review	
How to Spot Fake Reviews and Shady Ratings on Amazon	Jul 20, 2022
The Wall Street Journal	