Selected Recent Publications

1. Liu, H., Zou, J. and Ravishanker, N. (2022). Clustering high-frequency financial time series based on information theory, *Applied Stochastic Models in Business and Industry*, 38(1), 4—26
2. Conceicao, K. S., Andrade, M. G., Louzada, F. and Ravishanker, N. (2022). Characterizations and Generalizations of the Negative Binomial Distribution. *Computational Statistics*, 35, 1—32.
3. Hossain, Md. J., Ivan, J. N., Zhao, S., Wang, K., Sharmin, S., Ravishanker, N. and Jackson, E. (2022). Considering Demographics of Other Involved Drivers in Predicting the Highest Driver Injury Severity in Multi-Vehicle Crashes on Rural Two-Lane Roads in California*, Journal of Transportation Safety & Security*, 1—16.
4. Bhandari, D. R., Kenett, R. S. and Ravishanker, N. (2022). Data Science for Emerging Application Domains in Nepal. *Official Statistics of Nepal: Issues and Practices 2022*
5. Lim, D., Chen, M.-H., Ravishanker, N., Bolduc, M., McKeon, B. and Nolan, S. (2022). Hybrid monitoring procedure for detecting abnormality with application to energy consumption data. *Journal of Data Science, 20 (2), 135–155. DOI: 10.6339/22-JDS103*
6. Liu, H., Zou, J., and Ravishanker, N. (2022). Biclustering high-frequency financial time series based on information theory. *Statistical Analysis and Data Mining*,15(4), 447-462, http://dx.doi.org/10.1002/sam.11581
7. Dutta, C., Karpman, K., Basu, S. and Ravishanker, N. (2022). Review of statistical approaches for modeling high-frequency trading data, *Sankhya B*. https://doi.org/10.1007/s13571- 022-00280-7
8. Hu, G., Chen, M. H. and Ravishanker, N. (2022). Bayesian analysis of spherically parameterized dynamic multivariate stochastic volatility models, *Computational Statistics*, 1--25.
9. Chen, M.-H., Lim, D., Ravishanker, N., Linder, H., Bolduc, M., McKeon, B., and Nolan, S. (2022). Collaborative analysis for energy usage monitoring and management on a large university campus, *STAT*, e513, Wiley Online Library.
10. Guo, Q., Deng, X., Ravishanker, N. (2022). Association-Based Optimal Subpopulation Selection for Multivariate Data. *In: Bekker, A., Ferreira, J.T., Arashi, M., Chen, DG. (eds) Innovations in Multivariate Statistical Modeling. Emerging Topics in Statistics and Biostatistics*. Springer, Cham, https://doi.org/10.1007/978-3-031-13971-0_1
11. Hughes, W., Santos, L., Lu, Q., Malla, R., and Ravishanker, N., and Zhang, W. (2022). Probabilistic risk assessment framework for predicting large woody debris accumulations and scour near bridges. *Structure and Infrastructure Engineering,* https://doi.org/10.1080/15732479.2023.2177875
12. Wang, Z., Wang, H. and Ravishanker, N. (2022) Subsampling in longitudinal models. *Methodology and Computing in Applied Probability*, https://doi.org/10.1007/s11009-023-10015-4.
13. Soliman, A., Rajasekaran, S., Toman, P., and Ravishanker, N. (2022). A fast privacy-preserving patient record linkage of time series data. *Scientific Reports, https://doi.org/10.1038/s41598-023-29132-8*
14. Toman, P., Soliman, A., Ravishanker, N., Rajasekaran, S., Lally, N., D'addeo. H. (2022). Understanding insured behavior through causal analysis of IoT streams*, 2023 6th International Conference on Data Mining and Knowledge Discovery (DMKD 2023).*

15. Toman, P., Ravishanker, N., Rajasekaran, S., and Lally, N. (2023). Online evidential nearest neighbor classification for IoT time series, *International Statistical Review*, https://doi.org/10.1111/insr.12540
16. Pais, N., Ravishanker, N., O'Donnell, J., and Shaffer, E. (2023). Ensemble Hindcasting of Coastal Wave Heights, *Journal of Marine Science and Engineering: Coastal Engineering*, 11(6), 1110; https://doi.org/10.3390/jmse11061110
17. Chen, R. and Ravishanker, N. (2023). Feature construction using persistence landscapes for clustering noisy time series, Future Internet: State-of-the-Art Future Internet Technology in USA 2022–2023, https://www.mdpi.com/1999-5903/15/6/195
18. Andrade, M., Conceição, K. and Ravishanker, N. (2023). Zero-Modified Count Time Series Modeling with an Application to Influenza Cases. *AStA Advances in Statistical Analysis*, 1--27.
19. Pais, N., Ravishanker, N., Rajasekaran, S., Weinstock, G. (2023). Repeated Measures Latent Dirichlet Allocation for Longitudinal Microbiome Analysis. *The 12th International Conference on Computational Advances in Bio and Medical Sciences* (*ICCABS)* 2023, to appear.
20. Toman, P., Ravishanker, N., Rajasekaran, S., Lally, N. (2023). Latent autoregressive Student-t process models to assess impact of interventions in time series. *Future Internet: Wireless Sensor Networks in the IoT*. https://www.mdpi.com/1999-5903/16/1/8
21. Hossain, Md. J., Pais, N., Ivan, J.N., Zhao, S., Wang, K. and Ravishanker, N. (2024). Multilevel discrete outcome modeling for crash severity: a novel approach for crash severity models. *Transportation Research Record*, Sage Publications.
22. Dutta, C., Ravishanker, N., and Basu, S. (2024). Modeling multivariate positive-valued time series using R-INLA, *Applied Stochastic Models in Business and Industry*, http://doi.org/10.1002/asmb.2834
23. Wang, Y., Liu, H., Zou, J. and Ravishanker, N. (2024). Multivariate latent level correlation model with INLA for discrete financial time series, *Annals of Applied Statistics*, 18(3), 2462--2485.
24. Pais, N., O'Donnell, J. O., and Ravishanker, N. (2024). Investigating the joint probability of high coastal sea-level and high precipitation, *Journal of Marine Science and Engineering*, 12(3), 519, https://www.mdpi.com/2077-1312/12/3/519
25. Pais, N., Ravishanker, N., Rajasekaran, S., Weinstock, G., and Tran, D.-B. (2024). Randomized feature selection based semi-supervised latent Dirichlet allocation for microbiome analysis, *Scientific Reports*, 14(1), p. 8855; https://www.nature.com/articles/s41598-024-59682-4
26. Pais, N., Ravishanker, N., and Rajasekaran, S. (2024). Supervised Dynamic Correlated Topic Model for Classifying Categorical Time Series. Algorithms: *Evolutionary Algorithms and Machine Learning, 17(7), 275, DOI: 10.3390/a1707027*
27. Anantharaman, S., Ravishanker, N., and Basu, S. (2024). Modeling irregularly spaced high-frequency financial time series, *STAT*, 13(2), https://doi.org/10.1002/sta4.692
28. Liu, J., Wang, Z., Wang, H., and Ravishanker, N. (2024). Subsampling algorithms for irregularly spaced autoregressive models, *Algorithms*, 17(11), 524; https://doi.org/10.3390/a17110524
29. Conceição, K.S., Andrade, M.G., Lachos, V. H., and Ravishanker, N. (2024). Bayesian inference for zero-modified power series regression models. *Mathematics: Probability and Statistics*, 13(1), 60,https://doi.org/10.3390/math13010060

30. Wang, Y., Zhang, Y., Zou, J., and Ravishanker, N. (2025). Online structural break point detection in financial durations, *Statistics and Computing*, 35, 45, https://doi.org/10.1007/s11222-025-10577-y
31. Toman, P., Ravishanker, N., Lally, N., and Rajasekaran, S. (2025) Forecasting robust Gaussian process state space models for assessing intervention impact in IoT time series, *Forecasting*, 7(2), 22; https://doi.org/10.3390/forecast7020022
32. Ivan, J. N., Zhang, Y., and Ravishanker, N. (2026). Evaluation of Association between Observed Driving Speeds and the Occurrence of Crashes Using Naturalistic Driving Study Data. *Accident Analysis and Prevention*, 225, 108335, https://doi.org/10.1016/j.aap.2025.108335
33. Ren, Z., Ravishanker, N., de Vos, M., Pais, N. V., Chhatre, R., and O'Donnell, J. (2026). Attention-Based Ensemble Learning for Hindcasting Significant Wave Heights and Estimating Extreme Return Levels, *Ocean Engineering*, 345, 123412, https://doi.org/10.1016/j.oceaneng.2025.123412
34. Ren, Z., de Vos, M., Ravishanker, N., Pais, N., and O'Donnell, J. (2026). Noise-Augmented and Probabilistic Deep Learning for Significant Wave Height Forecasting with Attention-Based LSTM Models, *Applied Ocean Research, Volume 170, 105016.*