

## Recent Publications (since 2015)

1. Thavaneswaran, A., Ravishanker, N, and Liang, Y. (2015). Generalized Duration Models and Inference using Estimating Functions. *Annals of the Institute of Statistical Mathematics*, 67, 129-156.
2. Zhou, H., Lownes, N., Ivan, J. N., Gardner, P., and Ravishanker, N. (2015). Left Turn Gap Acceptance Behavior of Elderly Drivers at Unsignalized Intersections. *Journal of Transportation Safety and Security*, 7(4), 324-344.
3. Pai, J. S. and Ravishanker, N. (2015). Fast Approximate Likelihood Evaluation for Stable VARFIMA Processes. *Statistics and Probability Letters*, 103, 160-168.
4. Zhang, Y., Mamun, S. A., Ivan, J. N. and Ravishanker, N. (2015). Safety Effects of Exclusive and Concurrent Signal Phasing for Pedestrian Crossing, *Accident Analysis and Prevention*, 83, 26-36.
5. Ravishanker, N., Venkatesan, R. and Hu, S. (2015). Dynamic Models for Time Series of Counts with a Marketing Application. In *Handbook of Discrete-Valued Time Series*, eds. R. Davis, R. Lund, S. Holan and N. Ravishanker, Chapman & Hall/CRC, 425-446.
6. Thavaneswaran, A. and Ravishanker, N. (2015). Estimating Equations Approach for Integer-valued Time Series Models. In *Handbook of Discrete-Valued Time Series*, eds. R. Davis, R. Lund, S. Holan and N. Ravishanker, Chapman & Hall/CRC, 145-164.
7. Serhiyenko, V., Ravishanker, N. and Venkatesan, R. (2015). Approximate Bayesian Estimation for Multivariate Count Time Series Models. *Ordered Data Analysis, Models, and Health Research Methods* in Honor of H.N. Nagaraja, eds. P. K. Choudhary, C. Nagaraja, H. K. Ng, Springer-Verlag, 155-167. ISBN-10: 3319254316.
8. Serhiyenko, V., Mamun, S. A., Ivan, J. N. and Ravishanker, N. (2016). Fast Bayesian Inference for Modeling Multivariate Crash Counts on Connecticut Limited Access Highways, *Analytic Methods in Accident Research*, 9, 44-53.
9. Wang, K., Ivan, J. N., Ravishanker, N. and Jackson, E. (2017). Multivariate Poisson Lognormal Modeling of Crashes by Type and Severity on Rural Two Lane Highways, *Accident Analysis and Prevention*, 99, 6-19.
10. Ivan, J. N., McKernan, K., Zhang, Y., Ravishanker, N. and Mamun, S. A. (2017). A Study of Pedestrian Compliance with Traffic Signals for Exclusive and Concurrent Phasing, *Accident Analysis and Prevention*, 98, 157-166.
11. Harvill, J., Kohli, P., and Ravishanker, N. (2017). Clustering of Nonlinear and Nonstationary Time Series Using BSLEX, *Methodology and Computing in Applied Probability*, 19(3), 935-955.
12. Asha, G., Raja, A. V., and Ravishanker, N. (2017). Reliability Modeling Incorporating Load Share and Frailty, *Applied Stochastic Models in Business and Industry*, 34(2), 206-223.
13. Zhang, Y., Ravishanker, N., Ivan, J. N., Mamun, S. A. (2017). Where can Conflicts be Surrogates for Crashes? An Investigation Based on a Semi-Parametric Statistical Approach. Transportation Research Board Annual Meeting, Paper No. 17-0290, Washington, DC, Jan. 2017.
14. Serhiyenko, V., Ravishanker, N., Venkatesan, R. (2018). Multi-stage Multivariate Modeling of Temporal Patterns in Prescription Counts for Competing Drugs in a Therapeutic Category, *Applied Stochastic Models in Business and Industry*, (discussion paper), 34(1), 61-78.

15. Liu, H., Zou, J. and Ravishanker, N. (2018). Multiple Day Biclustering of High Frequency Financial Time Series, *STAT*, e176, 7(1), <https://doi.org/10.1002/sta4.176>.
16. Pai, J. S. and Ravishanker, N. (2018). Stochastic Models for Pricing Weather Derivatives using Constant Risk Premium, *Journal of the Iranian Statistical Society*, 17(2), 37-55.
17. Ravishanker N. (2018). Discussion of "Sequential Bayesian learning for stochastic volatility with variance-gamma jumps in returns, *Applied Stochastic Models in Business and Industry*, 34(4), 480-481.
18. Holan, S. H. and Ravishanker, N. (2018). A Review of Frequency Domain Clustering, *WIREs*, DOI: 10.1002/WICS.1444.
19. Zhang, Y., Ravishanker, N. and Zou, J. (2018). Structural Break Detection in Financial Durations, *Applied Stochastic Models in Business and Industry*, 34(6), 992-1006.F
20. Zhang, Y., Zou, J., Ravishanker, N., and Thavaneswaran, A. (2019). Modeling Financial Durations using Penalized Estimating Functions, *Computational Statistics and Data Analysis*, 131, 145-158.
21. Zhang, Y., Ravishanker, N., Ivan, J. N., Mamun, S. A. (2019). An application of the tau-path Method in Highway Safety, *Journal of the Indian Society for Probability and Statistics*, 20(1), 117–139.
22. Jayatileke, A., Nawarathna, L. S., Ravishanker, N., Nawarathna, R. D., Wijekoon, P., Vithanaarachchi, V.S.N. and Wijeyaweera, R.L. (2019). New Standards for Eruption time and sequence of Permanent Dentition in Sri Lankan children, *Communications in Statistics: Case Studies and Data Analysis*, 5(2), 92-100.
23. Venkatesan, R., Bleier, A., Reinartz, W. and Ravishanker, N. (2019). Improving Customer Profit Predictions with Customer Mindset Metrics through Multiple Overimputation, *Journal of the Academy of Marketing Science*, 47, 771–794; <https://link.springer.com/article/10.1007%2Fs11747-019-00658-6>
24. Gerte, R., K. Konduri, N. Ravishanker, A. Mondal and N. Eluru (2019), "Understanding the Relationships Between Demand for Shared Ride Modes: A Case Study Using Open Data From New York City," *Transportation Research Record Vol. 2673* (12) 30-39.
25. Ivan, J. N. and Ravishanker, N. (2019). Pedestrian Safety Analysis. *StatsRef*, Wiley, <https://doi.org/10.1002/9781118445112.stat08217>
26. Wang, Z., Mamun, A., Cai, X., Ravishanker, N. and Rajasekaran, S. (2019). Efficient Sequential and Parallel Algorithms for Estimating Higher Order Spectra, *CIKM '19: Proceedings of the 28th ACM International Conference on Information and Knowledge Management*, 1743–1752, <https://doi.org/10.1145/3357384.3358062>
27. Chen, R., Zhang, J., Ravishanker, N. and Konduri. K. (2019). Clustering Activity-Travel Behavior Time Series using Topological Data Analysis. *Journal of Big Data Analytics in Transportation*, 1 (2-3), 109-121.
28. Pai, J. S. and Ravishanker, N. (2020). Livestock Mortality Catastrophe Insurance using Fatal Shock Process. *Insurance: Mathematics and Economics*, 90, 58-65; <https://doi.org/10.1016/j.insmatheco.2019.11.001>
29. Mamun, S., Caraballo, F., Ivan, J. N., Ravishanker, N, Townsend, R., and Zhang, Y., (2020). Identifying Association between Pedestrian Safety Interventions and Street Crossing Behavior Considering Demographics and Traffic Context, *Journal of Transportation Safety and Security*, 12(3), 441-462.
30. Zhang, J., Konduri, K., Chen, R. and Ravishanker, N. (2019). A Novel Divide and Combine Based Approach to Estimating Mixture Markov Model for Large Scale

- Categorical Time Series Data: An Application to Study of Clusters Using Multiyear Travel Survey Data. *Transportation Research Record*, 2673(6), 236-246;  
<https://doi.org/10.1177/0361198119847476>
31. Parker, P. A., Holan, S. H. and Ravishanker, N. (2020). Nonlinear time series classification using bispectrum-based deep convolutional neural networks, *Applied Stochastic Models in Business and Industry*, 36(5), 877-890;  
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  33. Toman, P., Zhang, J., Ravishanker, N. and Konduri, K. (2020). Dynamic Predictive Models for Ridesourcing Services in New York City Using Daily Compositional Data. *Transportation Research Part C: Emerging Technologies*, 121, 102833.
  34. Raman, B., Ravishanker, N., Soyer, R., Gorti, V. and Sen, K. (2020). Dynamic Bayesian Modeling of Count Time Series Using R-INLA, *Journal of the Indian Statistical Association*, 58 (2), 157-192. <https://www.indstatassoc.org/journal-jisa/previous-volumes/dec-2020-vol-582>
  35. Toman, P., Zhang, J., Ravishanker, N. and Konduri, K. (2020). Spatiotemporal Analysis of Ridesourcing and Taxi Demand by Taxi-zones in New York City, *Journal of the Indian Society for Probability and Statistics*, 22, 231-249.  
<http://link.springer.com/article/10.1007/s41096-021-00102-5>
  36. Thavaneswaran, A. and Ravishanker, N. (2021). Estimating Functions for Generalized Circular Time Series Models, *Sankhya A*, 1-16.  
<https://doi.org/10.1007/s13171-020-00237-w>
  37. Raman, B., Sen, K., Gorti, V. and Ravishanker, N. (2021). Improving promotional effectiveness for consumer goods - a dynamic Bayesian approach, *Applied Stochastic Models in Business and Industry*, 37(4), 823-833.  
<http://doi.org/10.1002/asmb.2617>
  38. Ravishanker, N. and Chen, R. (2021). An Introduction to Persistent Homology for Time Series, *WIREs Computational Statistics*, February 2021,  
<https://doi.org/10.1002/wics.1548>
  39. Andrade, M. G., Achcar, J. A., Conceicao, K. S. and Ravishanker, N. (2021). A Time Series Model for Number of Cases and Deaths by COVID-19, *Journal of Data Science*, 19(2), 269–292 [doi.org/10.6339/21-JDS991](https://doi.org/10.6339/21-JDS991)
  40. Davis, R. A., Fokianos, K., Holan, S. H., Joe, H., Livsey, J., Lund, R., Pipiras, V. and Ravishanker, N. (2021). Count Time Series: A Methodological Review, *Journal of the American Statistical Association*, 116, 1533—1547.  
<https://www.tandfonline.com/doi/full/10.1080/01621459.2021.1904957>
  41. Soliman, A., Toman, P., Ravishanker, N., Rajasekaran, S., Lally, N., D’Addeo, H. Custom Unsupervised Approach for Pipe-Freeze Online Anomaly Detection, *7th IEEE World Forum on the Internet of Things - WFloT2021*;  
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  42. 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.
  43. Conceicao, K. S., Andrade, M. G., Louzada, F. and Ravishanker, N. (2021). Characterizations and Generalizations of the Negative Binomial Distribution. *Computational Statistics*, 35, 1—32. <https://doi.org/10.1007/s00180-021-01150-y>

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45. 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. <https://doi.org/10.1080/19439962.2022.2033899>
46. 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*.
47. 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-JDS1039
48. 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>.
49. 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>
50. Hu, G., Chen, M. H. and Ravishanker, N. (2022). Bayesian analysis of spherically parameterized dynamic multivariate stochastic volatility models, *Computational Statistics*, 1--25.
51. 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.
52. 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](https://doi.org/10.1007/978-3-031-13971-0_1)
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54. 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>.
55. 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>
56. 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)*.
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61. 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.
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64. 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>
65. 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*, to appear.
66. 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>
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69. Anantharaman, S., Ravishanker, N., and Basu, S. (2024). Modeling irregularly spaced high-frequency financial time series, *STAT*, to appear.
70. Conceição, K. S., Garcia, M. A., Carvalho, S. O., Lachos, V. H., Andrade, M. G. and Ravishanker, N. Modeling count data by k-modified distributions (under review).
71. Hossain, J. Md., Ivan, J. N., Zhao, S., Wang, K. and Ravishanker, N. Investigation of spatial transferability of alternative parameterizations for the dispersion function in negative binomial models predicting crash counts by severity (under review).
72. Zhang, Y., Zhang, Y., Zou, J., and Ravishanker, N. Online structural break point detection in financial durations (under review).
73. Lobo, J., Kamath, A., Vandana, K. E., Mukhopadhyay, C., and Ravishanker, N. Forecasting antimicrobial resistance rate with zeros or ones: A contemporary time series analysis approach (under review).
74. Conceição, K. S., Andrade, M. G., Lachos, V.H. and Ravishanker, N. Bayesian inference for zero-modified power series regression models (under review).

75. Dutta, C., Ravishanker, N., and Basu, S. Sparse logarithmic vector multiplicative error model with multivariate gamma errors (under review).