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Publications

Profile pages: [ORCID](#); [Google Scholar](#); [DBLP](#); [Semantic Scholar](#); [ResearchGate](#); [publons](#); [Scopus](#)

Peer-reviewed Journal Articles

- [J.12] P. Nilesbhbai Butani, J. Sreevalsan-Nair, and N. Kamat, "CMA: An End-to-End System for Reverse Engineering Choropleth Map Images," *IEEE Geoscience and Remote Sensing Letters*, vol. 21, pp. 1–5, 2024, presented in the GRSL Special Stream at the 37th Conference on Graphics, Patterns and Images (SIBGRAPI 2024). DOI: [10.1109/LGRS.2024.3444600](https://doi.org/10.1109/LGRS.2024.3444600). [Online]. Available: <https://ieeexplore.ieee.org/document/10637448>.
- [J.11] S. Mathai, P. Krishnan, and J. Sreevalsan Nair, "Understanding Graphical Literacy Using School Students' Comprehension Strategies," *Contemporary Education Dialogue*, vol. 22, no. 1, pp. 1–35, 2024. DOI: [10.1177/09731849241242855](https://doi.org/10.1177/09731849241242855).
- [J.10] L. S. Liang, J. Sreevalsan-Nair, and B. S. D. Sagar, "Multispectral Data Mining: A Focus on Remote Sensing Satellite Images," *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, e1522, October 2023. DOI: [10.1002/widm.1522](https://doi.org/10.1002/widm.1522). eprint: <https://wires.onlinelibrary.wiley.com/doi/pdf/10.1002/widm.1522>. [Online]. Available: <https://wires.onlinelibrary.wiley.com/doi/abs/10.1002/widm.1522>.
- [J.9] J. Sreevalsan-Nair, A. Mubayi, J. Chhabra, R. R. Vangimalla, and P. R. Ghogale, "Evaluating Early Pandemic Response through Length-of-Stay Analysis of Case Logs and Epidemiological Modeling: A Case Study of Singapore in Early 2020," *Computational and Mathematical Biophysics*, vol. 11, no. 1, p. 20230104, October 2023. DOI: [10.1515/cmb-2023-0104](https://doi.org/10.1515/cmb-2023-0104). [Online]. Available: <https://www.degruyter.com/document/doi/10.1515/cmb-2023-0104/html>.
- [J.8] H. Ravindra and J. Sreevalsan-Nair, "A Methodology for Integrating Population Health Surveys Using Spatial Statistics and Visualizations for Cross-sectional Analysis," *SN Computer Science*, vol. 4, no. 224, pp. 1–19, 2023. DOI: [10.1007/s42979-022-01652-6](https://doi.org/10.1007/s42979-022-01652-6). [Online]. Available: <https://rdcu.be/c56W3>.
- [J.7] S. C. Daggubati, J. Sreevalsan-Nair, and K. Dadhich, "BarChartAnalyzer: Data Extraction and Summarization of Bar Charts from Images," *SN Computer Science*, vol. 3, no. 500, pp. 1–19, 2022. DOI: [10.1007/s42979-022-01380-x](https://doi.org/10.1007/s42979-022-01380-x). [Online]. Available: <https://rdcu.be/cWJWj>.
- [J.6] R. R. Vangimalla and J. Sreevalsan-Nair, "Communities and Cliques in Functional Brain Network Using Multiscale Consensus Approach," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 30, pp. 1951–1960, 2022. DOI: [10.1109/TNSRE.2022.3190390](https://doi.org/10.1109/TNSRE.2022.3190390).
- [J.5] S. Singh and J. Sreevalsan-Nair, "Adaptive Multiscale Feature Extraction in a Distributed System for Semantic Classification of Airborne LiDAR Point Clouds," *IEEE Geoscience and Remote Sensing Letters*, vol. 19, pp. 1–5, Article Sequence Number: 6502305, 2022. DOI: [10.1109/LGRS.2021.3099935](https://doi.org/10.1109/LGRS.2021.3099935).
- [J.4] U. M. Mehta, D. Shadakshari, P. Vani, S. S. Naik, V. K. Raj, R. R. Vangimalla, Y. J. Reddy, J. Sreevalsan-Nair, and R. D. Bharath, "Case Report: Obsessive compulsive disorder in posterior cerebellar infarction-illustrating clinical and functional connectivity modulation using MRI-informed transcranial magnetic stimulation," *Wellcome Open Research*, vol. 5:189, 2020. DOI: [10.12688/wellcomeopenres.16183.2](https://doi.org/10.12688/wellcomeopenres.16183.2).
- [J.3] J. Sreevalsan-Nair, A. Jindal, and B. Kumari, "Contour Extraction in Buildings in Airborne LiDAR Point Clouds Using Multi-scale Local Geometric Descriptors and Visual Analytics," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 11(5), pp. 2320–2335, 2018. DOI: [10.1109/JSTARS.2018.2833801](https://doi.org/10.1109/JSTARS.2018.2833801).

- [J.2] J. Sreevalsan-Nair, L. Linsen, and B. Hamann, “Topologically accurate dual isosurfacing using ray intersection,” *JVRB-Journal of Virtual Reality and Broadcasting*, vol. 4, no. 4, 2007. DOI: [10.20385/1860-2037/4.2007.4](https://doi.org/10.20385/1860-2037/4.2007.4).
- [J.1] D. S. Thompson, R. Machiraju, M. Jiang, J. S. Nair, G. Craclun, and S. S. D. Venkata, “Physics-based feature mining for large data exploration,” *Computing in Science & Engineering*, vol. 4, no. 4, pp. 22–30, 2002. DOI: [10.1109/MCISE.2002.1014977](https://doi.org/10.1109/MCISE.2002.1014977).

Peer-reviewed Conference Papers

- [C.37] R. N. Laveti, J. Sreevalsan-Nair, and T. Srikanth, “EAMF: An Entropy-enhanced Attention-based Ensemble Metric Few-Shot Learning for MRI Image Classification,” in *Proceedings of the 2025 47th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) (accepted)*, IEEE, 2025.
- [C.36] B. Gnanaraj, S. Manivasagam, and J. Sreevalsan-Nair, “To the Point: From Dynamic Heatmap Video to Gaze Points,” in *Proceedings of the 2025 Symposium on Eye Tracking Research and Applications (accepted)*, ser. ETRA ’25, New York, NY, USA: ACM, 2025.
- [C.35] J. Sreevalsan-Nair, “Data-Driven Framework for Enhanced Flash Flood Preparedness and Building Urban Resilience,” in *Proceedings of the 2025 IEEE Bangalore Humanitarian Technology Conference (BHTC 2025) (accepted)*, IEEE, 2025.
- [C.34] V. Jaisankar and J. Sreevalsan-Nair, “SuP-SLiP: Subsampled Processing of Large-scale Static LIDAR Point Clouds,” in *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on Searching and Mining Large Collections of Geospatial Data*, ser. GeoSearch ’24, ACM, 2024, 40–47. DOI: [10.1145/3681769.3698585](https://doi.org/10.1145/3681769.3698585).
- [C.33] D. Katkoria, J. Sreevalsan-Nair, M. Sati, and S. Karunakaran, “WBF-ODAL: Weighted Boxes Fusion for 3D Object Detection from Automotive LiDAR Point Clouds,” in *Proceedings of 2024 International Conference on Vehicular Technology and Transportation System (ICVTTS)*, IEEE, 2024, 1–6, **Best Paper Award**. DOI: [10.1109/ICVTTS62812.2024.10763933](https://doi.org/10.1109/ICVTTS62812.2024.10763933).
- [C.32] D. Katkoria, J. Sreevalsan-Nair, M. Sati, and S. Karunakaran, “ME-ODAL: Mixture-of-Experts Ensemble of CNN Models for 3D Object Detection from Automotive LiDAR Point Clouds,” in *Deep Learning Theory and Applications, 5th International Conference DeLTA 2024, Dijon, France, July 10-11, 2024, Proceedings, Part II, CCIS*, vol. 2172, Springer Cham, 2024, pp. 279–300. DOI: [10.1007/978-3-031-66705-3](https://doi.org/10.1007/978-3-031-66705-3).
- [C.31] A. Mundayatt and J. Sreevalsan-Nair, “Scaling up Study Area Size in Flood Susceptibility Mapping,” in *Proceedings of 2024 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, IEEE, 2024, pp. 3211–3214. DOI: [10.1109/IGARSS53475.2024.10640798](https://doi.org/10.1109/IGARSS53475.2024.10640798).
- [C.30] P. Rastogi, K. Singh, and J. Sreevalsan-Nair, “SunburstChartAnalyzer: Hierarchical Data Retrieval from Images of Sunburst Charts for Tree Visualization,” in *Computer Graphics and Visual Computing (CGVC)*, P. Vangorp and D. Hunter, Eds., The Eurographics Association, 2023, pp. 97–101, ISBN: 978-3-03868-231-8. DOI: [10.2312/cgvc.20231200](https://doi.org/10.2312/cgvc.20231200).
- [C.29] B. Gnanaraj and J. Sreevalsan-Nair, “EyeExplore: An Interactive Visualization Tool for Eye-Tracking Data for Novel Stimulus-Based Analysis,” in *Proceedings of the 2023 Symposium on Eye Tracking Research and Applications*, ser. ETRA ’23, New York, NY, USA: ACM, 2023. DOI: [10.1145/3588015.3590132](https://doi.org/10.1145/3588015.3590132).
- [C.28] J. Sreevalsan-Nair, “On Metavisualization and Properties of Visualization,” in *Proceedings of the 18th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications - Vol 3, IVAPP*, INSTICC, SciTePress, 2023, pp. 230–239, ISBN: 978-989-758-634-7. DOI: [10.5220/0011794300003417](https://doi.org/10.5220/0011794300003417).
- [C.27] J. Sreevalsan-Nair and A. Jakher, “CAP-DSDN: Node Co-association Prediction in Communities in Dynamic Sparse Directed Networks and a Case Study of Migration Flow,” in *Proceedings of the 14th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management - Vol I: KDIR*, INSTICC, SciTePress, 2022, 63–74 **Best Paper Award Nomination**, ISBN: 978-989-758-614-9. DOI: [10.5220/0011537600003335](https://doi.org/10.5220/0011537600003335).

- [C.26] H. Ravindra and J. Sreevalsan-Nair, “Composition of Geospatial Visualizations for Scale-aware Views of Multiple Outcome Variables in Population Surveys,” in *Proceedings of the 26th International Conference on Information Visualization IV2022*, IEEE, 2022, pp. 432–441. DOI: [10.1109/IV56949.2022.00077](https://doi.org/10.1109/IV56949.2022.00077).
- [C.25] D. Katkoria and J. Sreevalsan-Nair, “RoSELS: Road Surface Extraction for 3D Automotive LiDAR Point Cloud Sequence,” in *Proceedings of the 3rd International Conference on Deep Learning Theory and Applications (DeLTA)*, INSTICC, SciTePress, 2022, 55–67. **Best Paper Award Nomination**, ISBN: 978-989-758-584-5. DOI: [10.5220/0011301700003277](https://doi.org/10.5220/0011301700003277).
- [C.24] S. C. Daggubati and J. Sreevalsan-Nair, “ACCirO: A System for Analyzing and Digitizing Images of Charts with Circular Objects,” in *Computational Science – ICCS 2022, Proceedings of the 22nd International Conference, Part III, chapter 50*, Cham: Springer International Publishing, 2022, pp. 605–612. DOI: [10.1007/978-3-031-08757-8_50](https://doi.org/10.1007/978-3-031-08757-8_50).
- [C.23] J. Sreevalsan-Nair, P. Mohapatra, and S. Singh, “IMGD: Image-based Multiscale Global Descriptors of Airborne LIDAR Point Clouds Used for Comparative Analysis,” in *Proceedings of the Smart Tools and Apps for Graphics (STAG 2021) - Eurographics Italian Chapter Conference*, P. Frosini, D. Giorgi, S. Melzi, and E. Rodolá, Eds., The Eurographics Association, 2021, pp. 61–72, ISBN: 978-3-03868-165-6. DOI: [10.2312/stag.20211475](https://doi.org/10.2312/stag.20211475).
- [C.22] R. Thangavel and J. Sreevalsan-Nair, “CV4FEE: Flood Extent Estimation Using Consensus Voting in Ensemble of Methods for Change Detection in Sentinel-1 GRD SAR Images,” in *Proceedings of the 7th Asia-Pacific Conference on Synthetic Aperture Radar (APSAR 2021)*, IEEE, 2021, pp. 1–6. DOI: [10.1109/APSAR52370.2021.9688390](https://doi.org/10.1109/APSAR52370.2021.9688390).
- [C.21] A. C. Victor and J. Sreevalsan-Nair, “Building 3D Virtual Worlds from Monocular Images of Urban Road Traffic Scenes,” in *International Symposium on Visual Computing (ISVC 2021), Part II, Lecture Notes in Computer Science LNCS 13018*, Bebis, George et al., Ed., Springer Nature Switzerland AG, 2021, pp. 1–14. DOI: [10.1007/978-3-030-90436-4_37](https://doi.org/10.1007/978-3-030-90436-4_37).
- [C.20] R. R. Vangimalla and J. Sreevalsan-Nair, “HCNM: Heterogeneous Correlation Network Model for Multi-level Integrative Study of Multi-omics Data for Cancer Subtype Prediction,” in *Proceedings of the 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, IEEE, 2021, pp. 1880–1886. DOI: [10.1109/EMBC46164.2021.9630781](https://doi.org/10.1109/EMBC46164.2021.9630781).
- [C.19] K. Dadhich, S. C. Daggubati, and J. Sreevalsan-Nair, “ScatterPlotAnalyzer: Digitizing Images of Charts Using Tensor-based Computational Model,” in *International Conference on Computational Science, Computational Science – ICCS 2021, Part V, Lecture Notes in Computer Science, volume 12746*, M. Paszynski, D. Kranzlmüller, V. V. Krzhizhanovskaya, and P. M. Dongarra Jack J. and Sloot, Eds., Cham: Springer International Publishing, 2021, pp. 70–83, ISBN: 978-3-030-77977-1. DOI: [10.1007/978-3-030-77977-1_6](https://doi.org/10.1007/978-3-030-77977-1_6).
- [C.18] K. Dadhich, S. C. Daggubati, and J. Sreevalsan-Nair, “BarChartAnalyzer: Digitizing Images of Bar Charts,” in *Proceedings of the 1st International Conference on Image Processing and Vision Engineering (IMPROVE)*, INSTICC, SciTePress, 2021, 17–28. **Best Paper Award Nomination**. DOI: [10.5220/0010408300170028](https://doi.org/10.5220/0010408300170028).
- [C.17] H. Ravindra and J. Sreevalsan-Nair, “Integrating Population Surveys Using Spatial Visual Analytics: A Case Study on Nutrition and Health Indicators of Children under Five in India,” in *Proceedings of the 7th International Conference on Geographical Information Systems Theory, Applications and Management - Volume I (GISTAM)*, INSTICC, SciTePress, 2021, pp. 203–213, ISBN: 978-989-758-503-6. DOI: [10.5220/0010462102030213](https://doi.org/10.5220/0010462102030213).
- [C.16] S. Singh and J. Sreevalsan-Nair, “A Distributed System for Optimal Scale Feature Extraction and Semantic Classification of Large-Scale Airborne LiDAR Point Clouds,” in *17th International Conference on Distributed Computing and Internet Technology (ICDCIT), Lecture Notes in Computer Science*, Springer International Publishing, 2021, pp. 280–288. DOI: [10.1007/978-3-030-65621-8_18](https://doi.org/10.1007/978-3-030-65621-8_18).
- [C.15] S. Singh and J. Sreevalsan-Nair, “A distributed system for multiscale feature extraction and semantic classification of large-scale LiDAR point clouds,” in *Proceedings of the 2020 IEEE India Geoscience and Remote Sensing Symposium (InGARSS)*, IEEE, 2020, 74–77. **Best Paper Award**. DOI: [10.1109/InGARSS48198.2020.9358938](https://doi.org/10.1109/InGARSS48198.2020.9358938).

- [C.14] J. Sreevalsan-Nair and P. Mohapatra, “Influence of Aleatoric Uncertainty on Semantic Classification of Airborne LiDAR Point Clouds: A Case Study with Random Forest Classifier Using Multiscale Features,” in *Proceedings of the 2020 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2020)*, IEEE, 2020, pp. 1066–1070. DOI: [10.1109/IGARSS39084.2020.9323409](https://doi.org/10.1109/IGARSS39084.2020.9323409).
- [C.13] R. R. Vangimalla and J. Sreevalsan-Nair, “A Multiscale Consensus Method Using Factor Analysis to Extract Modular Regions in the Functional Brain Network,” in *Proceedings of the 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, IEEE, 2020, pp. 2824–2828. DOI: [10.1109/EMBC44109.2020.9175622](https://doi.org/10.1109/EMBC44109.2020.9175622).
- [C.12] K. Lukose, S. Agarwal, V. N. Rao, and J. Sreevalsan-Nair, “Design Study for Creating Pathfinder: A Visualization Tool for Generating Software Test Plans using Model based Testing,” in *Proceedings of the 13th International Joint Conference on Computer Vision, Imaging, and Computer Graphics Theory and Applications (VISIGRAPP (3: IVAPP))*, INSTICC, 2018, pp. 289–300. DOI: [10.5220/0006622302890300](https://doi.org/10.5220/0006622302890300).
- [C.11] J. Sreevalsan-Nair and A. Jindal, “Using gradients and tensor voting in 3D local geometric descriptors for feature detection in airborne lidar point clouds in urban regions,” in *Proceedings of the 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, IEEE, 2017, pp. 5881–5884. DOI: [10.1109/IGARSS.2017.8128347](https://doi.org/10.1109/IGARSS.2017.8128347).
- [C.10] J. Sreevalsan-Nair and S. Agarwal, “NodeTrix-CommunityHierarchy: Techniques for Finding Hierarchical Communities for Visual Analytics of Small-world Networks,” in *Proceedings of the 12th International Joint Conference on Computer Vision, Imaging, and Computer Graphics Theory and Applications (VISIGRAPP (3: IVAPP))*, INSTICC, 2017, 140–151. **Best Paper Award Nomination**. DOI: [10.5220/0006175701400151](https://doi.org/10.5220/0006175701400151).
- [C.9] S. Agarwal, A. Tomar, and J. Sreevalsan-Nair, “Nodetrix-multiplex: Visual analytics of multiplex small world networks,” in *International Workshop on Complex Networks and their Applications, Studies in Computational Intelligence*, vol. 693, Springer International Publishing, 2016, pp. 579–591. DOI: [10.1007/978-3-319-50901-3_46](https://doi.org/10.1007/978-3-319-50901-3_46).
- [C.8] B. Kumari and J. Sreevalsan-Nair, “An interactive visual analytic tool for semantic classification of 3D urban LiDAR point cloud,” in *Proceedings of the 23rd SIGSPATIAL International Conference on Advances in Geographic Information Systems*, ACM, 2015, pp. 1–4. DOI: [10.1145/2820783.2820863](https://doi.org/10.1145/2820783.2820863).
- [C.7] B. Kumari, A. Ashe, and J. Sreevalsan-Nair, “Remote interactive visualization of parallel implementation of structural feature extraction of three-dimensional LiDAR point cloud,” in *3rd International Conference on Big Data Analytics, Lecture Notes in Computer Science*, vol. 8883, Springer Cham, 2014, pp. 129–132. DOI: [10.1007/978-3-319-13820-6_10](https://doi.org/10.1007/978-3-319-13820-6_10).
- [C.6] S. Parveen and J. Sreevalsan-Nair, “Visualization of small world networks using similarity matrices,” in *2nd International Conference on Big Data Analytics, Lecture Notes in Computer Science*, Springer Cham, vol. 8302, 2013, pp. 151–170. DOI: [10.1007/978-3-319-03689-2_10](https://doi.org/10.1007/978-3-319-03689-2_10).
- [C.5] A. Narayan, J. Sreevalsan-Nair, K. Gaither, and B. Hamann, “Isosurface extraction from hybrid unstructured grids containing pentahedral elements,” in *Proceedings of the International Conference on Information Visualization Theory and Applications (GRAPP/IVAPP)*, INSTICC, 2012, pp. 660–669. DOI: [10.5220/0003852506600669](https://doi.org/10.5220/0003852506600669).
- [C.4] W. Xu and J. Sreevalsan-Nair, “Visual Representation of Multiple Associations in Data using Constrained Graph Layout,” in *Proceedings of the EG UK Theory and Practice of Computer Graphics (TPCG)*, Eurographics, 2009, pp. 65–68. DOI: [10.2312/LocalChapterEvents/TPCG/TPCG09/065-068](https://doi.org/10.2312/LocalChapterEvents/TPCG/TPCG09/065-068).
- [C.3] J. Sreevalsan-Nair, M. Verhoeven, D. L. Woodruff, I. Hotz, and B. Hamann, “Human-guided enhancement of a stochastic local search: Visualization and adjustment of 3D pheromone,” in *International Workshop on Engineering Stochastic Local Search Algorithms (SLS), Lecture Notes in Computer Science Series*, Springer-Verlag, 2007, pp. 182–186. DOI: [10.1007/978-3-540-74446-7_14](https://doi.org/10.1007/978-3-540-74446-7_14).
- [C.2] J. Sreevalsan-Nair, E. Van Nieuwenhuysse, I. Hotz, L. Linsen, and B. Hamann, “An interactive visual exploration tool for Northern California’s water-monitoring network,” in *Proceedings of the Visualization and Data Analysis 2007*, International Society for Optics and Photonics, vol. 6495, 2007, 649506:1–649506:12. DOI: [10.1117/12.703695](https://doi.org/10.1117/12.703695).

- [C.1] J. Sreevalsan-Nair, B. Hamann, and L. Linsen, “Using ray intersection for dual isosurfacing,” in *Proceedings of the International Conference on Computer Graphics Theory and Applications (GRAPP)*, INSTICC, 2006, pp. 34–42. DOI: [10.20385/1860-2037/4.2007.4](https://doi.org/10.20385/1860-2037/4.2007.4).

Peer-reviewed Chapters in Books and Monographs

- [B.31] J. Sreevalsan-Nair, A. Mundayatt, B. Gnanaraj, A. Thomas, N. C. Kumar, G. G. Sabhahit, S. Joshi, and T. K. Srikanth, “Mental Healthcare in the Times of Climate Change Action and Data Science (*accepted*),” in *Data-Driven Insights and Analytics for Measurable Sustainable Development Goals*, Elsevier, 2024.
- [B.30] D. Katkoria and J. Sreevalsan-Nair, “Evaluating and Improving RoSELS for Road Surface Extraction from 3D Automotive LiDAR Point Cloud Sequences,” in *Deep Learning Theory and Applications: Revised Selected Papers from Third International Conference DeLTA 2022, Portugal, Chapter 6, CCIS*, vol. 1858, Springer Cham, 2023, pp. 98–120. DOI: [10.1007/978-3-031-37317-6_6](https://doi.org/10.1007/978-3-031-37317-6_6). [Online]. Available: <https://link.springer.com/book/9783031373183>.
- [B.29] L.-T. Tay and J. Sreevalsan-Nair, “Disaster Susceptibility Analysis in Remote Sensing,” in *Cognitive Sensing Technologies and Applications*, G. R. Sinha, B. Subudhi, C.-P. Fan, and H. Nisar, Eds., Stevenage, UK: Institute of Engineering and Technology (IET), 2023, ISBN: ISBN-13:978-1-83953-689-2. DOI: [10.1049/PBCE135E_ch16](https://doi.org/10.1049/PBCE135E_ch16). [Online]. Available: https://digital-library.theiet.org/content/books/10.1049/pbce135e_ch16.
- [B.28] S. Singh and J. Sreevalsan-Nair, “Visual Exploration of LiDAR Point Clouds,” in *Advances in Scalable and Intelligent Geospatial Analytics: Challenges and Applications, Chapter 12*, K. Kurte, S. Durbha, J. Sanyal, L. Yang, S. Chaudhari, U. Bhangale, and U. Bharambe, Eds., Florida, USA: CRC Press, 2023, p. 19. DOI: [10.1201/9781003270928](https://doi.org/10.1201/9781003270928).
- [B.27] J. Sreevalsan-Nair, “Interpolation,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_164-1](https://doi.org/10.1007/978-3-030-26050-7_164-1).
- [B.26] J. Sreevalsan-Nair, “Eigenvalues and Eigenvectors,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_98-1](https://doi.org/10.1007/978-3-030-26050-7_98-1).
- [B.25] J. Sreevalsan-Nair, “Independent Component Analysis,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_158-1](https://doi.org/10.1007/978-3-030-26050-7_158-1).
- [B.24] J. Sreevalsan-Nair, “Laplace Transform,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_175-1](https://doi.org/10.1007/978-3-030-26050-7_175-1).
- [B.23] J. Sreevalsan-Nair, “Expectation-Maximization Algorithm,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_103-1](https://doi.org/10.1007/978-3-030-26050-7_103-1).
- [B.22] J. Sreevalsan-Nair, “Simulated Annealing,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_291-1](https://doi.org/10.1007/978-3-030-26050-7_291-1).
- [B.21] J. Sreevalsan-Nair, “K-Medoids,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_172-1](https://doi.org/10.1007/978-3-030-26050-7_172-1).
- [B.20] J. Sreevalsan-Nair, “Fuzzy C-means Clustering,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_129-1](https://doi.org/10.1007/978-3-030-26050-7_129-1).
- [B.19] J. Sreevalsan-Nair, “Proximity Regression,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_258-1](https://doi.org/10.1007/978-3-030-26050-7_258-1).

- [B.18] J. Sreevalsan-Nair, “Normal Distribution,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_228-1](https://doi.org/10.1007/978-3-030-26050-7_228-1).
- [B.17] J. Sreevalsan-Nair, “Virtual Globe,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_346-1](https://doi.org/10.1007/978-3-030-26050-7_346-1).
- [B.16] J. Sreevalsan-Nair, “K-Means Clustering,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_171-1](https://doi.org/10.1007/978-3-030-26050-7_171-1).
- [B.15] J. Sreevalsan-Nair, “K-Nearest Neighbors,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_170-1](https://doi.org/10.1007/978-3-030-26050-7_170-1).
- [B.14] J. Sreevalsan-Nair, “Maximum Likelihood,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_198-1](https://doi.org/10.1007/978-3-030-26050-7_198-1).
- [B.13] J. Sreevalsan-Nair, “Minimum Entropy Deconvolution,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_206-1](https://doi.org/10.1007/978-3-030-26050-7_206-1).
- [B.12] J. Sreevalsan-Nair, “Data Visualization,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_78-1](https://doi.org/10.1007/978-3-030-26050-7_78-1).
- [B.11] J. Sreevalsan-Nair, “Multiscaling,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_223-1](https://doi.org/10.1007/978-3-030-26050-7_223-1).
- [B.10] J. Sreevalsan-Nair, “LiDAR,” in *Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series*, B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, Eds., Cham: Springer International Publishing, 2022. DOI: [10.1007/978-3-030-26050-7_180-1](https://doi.org/10.1007/978-3-030-26050-7_180-1).
- [B.9] V. Sridhar, J. Sreevalsan-Nair, P. R. Ghogale, and R. R. Vangimalla, “Sharing and Use of Non-Personal Health Information: Case of the COVID-19 Pandemic,” in *Data Centric Living: Algorithms, Digitization and Regulation*, V. Sridhar, Ed., 1st ed., Routledge India, 2022, ch. 8, ISBN: 9780367536534. DOI: [10.4324/9781003093442](https://doi.org/10.4324/9781003093442).
- [B.8] J. Sreevalsan-Nair, K. Dadhich, and S. C. Daggubati, “Tensor Fields for Data Extraction from Chart Images: Bar Charts and Scatter Plots,” in *Topological Methods in Data Analysis and Visualization VI*, I. Hotz, T. Bin Masood, F. Sadlo, and J. Tierny, Eds., Springer, Cham, 2021, pp. 219–241. DOI: [10.1007/978-3-030-83500-2_12](https://doi.org/10.1007/978-3-030-83500-2_12). [Online]. Available: <https://arxiv.org/abs/2010.02319>.
- [B.7] R. R. Vangimalla and J. Sreevalsan-Nair, “Comparing Community Detection Methods in Brain Functional Connectivity Networks,” in *International Conference on Computational Intelligence, Cyber Security and Computational Models (ICC³), Communications in Computer and Information Science*, vol. 1213, Springer, Singapore, 2019, pp. 3–17. DOI: [10.1007/978-981-15-9700-8_1](https://doi.org/10.1007/978-981-15-9700-8_1). [Online]. Available: <https://www.biorxiv.org/content/10.1101/2020.02.06.935783v1>.
- [B.6] J. Sreevalsan-Nair, “Visual Analytics of 3D Airborne LiDAR Point Clouds in Urban Regions,” in *Sarda N., Acharya P., Sen S. (eds), Geospatial Infrastructure, Applications, and Technologies: India Case Studies*, Springer, Singapore, 2018, pp. 313–325. DOI: [10.1007/978-981-13-2330-0_23](https://doi.org/10.1007/978-981-13-2330-0_23).
- [B.5] J. Sreevalsan-Nair and B. Kumari, “Local geometric descriptors for multi-scale probabilistic point classification of airborne LiDAR point clouds,” in *Modeling, Analysis, and Visualization of Anisotropy*, Springer, 2017, pp. 175–200. DOI: [10.1007/978-3-319-61358-1_8](https://doi.org/10.1007/978-3-319-61358-1_8).
- [B.4] J. Sreevalsan-Nair, C. Auer, B. Hamann, and I. Hotz, “Eigenvector-based interpolation and segmentation of 2D tensor fields,” in *Topological Data Analysis and Visualization: Theory, Algorithms, and Applications, in Mathematics and Visualization Series*, Springer-Verlag, 2011, pp. 139–150. DOI: [10.1007/978-3-642-15014-2_12](https://doi.org/10.1007/978-3-642-15014-2_12).

- [B.3] C. Auer, J. Sreevalsan-Nair, V. Zobel, and I. Hotz, “2D Tensor Field Segmentation,” in *Dagstuhl Conference 2009 on Scientific Visualization: Interactions, Features, Metaphors*, in *Dagstuhl Follow-Ups*, vol. 2, 2011, pp. 17–35. DOI: [10.4230/DFU.Vol2.SciViz.2011.17](https://doi.org/10.4230/DFU.Vol2.SciViz.2011.17).
- [B.2] I. Hotz, J. Sreevalsan-Nair, H. Hagen, and B. Hamann, “Tensor field reconstruction based on eigenvector and eigenvalue interpolation,” in *Scientific Visualization: Advanced Concepts*, in *Dagstuhl Follow-Ups*, vol. 1, 2010, pp. 110–123. DOI: [10.4230/DFU.SciViz.2010.110](https://doi.org/10.4230/DFU.SciViz.2010.110).
- [B.1] J. Sreevalsan-Nair, *Using Duality in Various Scientific Visualizations*, reprint of Ph.D. dissertation, by VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG Publishers, May 2008.

Peer-reviewed Extended Abstracts and Posters

- [EA.11] H. Ravindra and J. Sreevalsan-Nair, *Spatial and Visual Analytics for Grouped Analysis of Population Survey Data*, presented at the doctoral research workshop at the 26th International Conference on Information Visualization IV2022, July 2022.
- [EA.10] S. Agarwal, F. Beck, U. Ghosh, and J. Sreevalsan-Nair, *CiteVis: Visual Analysis of Overlapping Citation Intents as Dynamic Sets*, accepted for poster presentation at the 15th IEEE Pacific Visualization Symposium (PacificVis) 2022, April 2022. [Online]. Available: <https://s-agarwl.github.io/publication/Agarwal2022CiteVis>.
- [EA.9] A. Jakher and J. Sreevalsan-Nair, *Community Detection in Migration Flow Networks*, accepted for oral presentation, at the Urban Complex Systems 2020, a satellite event at the annual Conference on Complex Systems 2020 (CCS 2020), December 2020.
- [EA.8] J. Sreevalsan-Nair, R. R. Vangimalla, and P. R. Ghogale, *Influence of COVID-19 Transmission Stages and Demographics on Length of In-Hospital Stay in Singapore for the First 1000 Patients*, accepted for poster and oral presentations, at the COVID-19 track at the 28th Conference on Intelligent Systems for Molecular Biology (ISMB 2020), July 2020. DOI: [10.7490/f1000research.1118104.1](https://doi.org/10.7490/f1000research.1118104.1).
- [EA.7] R. R. Vangimalla and J. Sreevalsan-Nair, *Construction and Visualization of Disease of Lung Diseases Associated with COVID-19 from Co-association Networks of Multi-omics Data*, accepted for poster and oral presentations, at the NetBio COSI track at the 28th Conference on Intelligent Systems for Molecular Biology (ISMB 2020), July 2020. DOI: [10.7490/f1000research.1118138.1](https://doi.org/10.7490/f1000research.1118138.1).
- [EA.6] R. R. Vangimalla and J. Sreevalsan-Nair, *Consensus Methods for Network Analysis of Biomedical Data: Case Studies on Brain Functional Connectivity Network and Gene-Gene Association Networks*, presented at the doctoral colloquium presentation, at the 4th International Conference on Computational Intelligence and Networks (CINE 2020), February 2020.
- [EA.5] A. C. Victor and J. Sreevalsan-Nair, *Scene Editing Using Synthesis of Three-Dimensional Virtual Worlds From Monocular Images of Urban Road Traffic Scenes*, accepted for spotlight session oral and poster presentations, at the ACM SIGGRAPH European Conference on Visual Media Production (CVMP), December 2019. [Online]. Available: <https://www.cvmc-conference.org/files/2019/short/48.pdf>.
- [EA.4] R. R. Vangimalla and J. Sreevalsan-Nair, *RadTrix: A Composite Hybrid Visualization for Unbalanced Bipartite Graphs in Biological Datasets*, accepted for poster and video presentations, at the 9th Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM), September 2019. [Online]. Available: <https://conferences.eg.org/vcbm2019/wp-content/uploads/sites/2/2019/09/05.pdf>.
- [EA.3] J. Sreevalsan-Nair, N. Murthy, S. Agarwal, R. R. Vangimalla, and S. Ramesh, *Collaborative Design of Visual Analytics Techniques for Survey Data for Community-based Research in Public Health*, as poster and lightning talk presentations, at the 8th Workshop on Visual Analytics in Healthcare, affiliated with IEEE VIS, October 2017.
- [EA.2] K. P. B.V., N. Kumar, S. Agrawal, H. Gangakhedkar, and J. Sreevalsan-Nair, *Partial Implementation of Hybrid MD5-Blowfish Algorithm in Kernel Space on the GPU Using CUDA*, accepted for poster presentation, at the 19th Annual International Conference on High Performance Computing - Student Research Symposium (HiPC2012-SRS), December 2012.

- [EA.1] K. Patel, J. Savalia, and J. Sreevalsan-Nair, *Parallelization of Complex Event Processing*, accepted for oral presentation, at the 18th Annual International Conference on High Performance Computing - Student Research Symposium (HiPC2011-SRS), December 2011.

Non-Peer-Reviewed Research Articles (Preprints and Invited Reviews)

- [NP.11] J. Sreevalsan-Nair and A. Mundayatt, *Evolution of Data-driven Single- and Multi-Hazard Susceptibility Mapping and Emergence of Deep Learning Methods*, arXiv Preprints, 2025. [Online]. Available: <https://arxiv.org/abs/2502.09045>.
- [NP.10] V. Arora, S. Gupta, A. Kudupu, A. Priyadarshi, A. Mundayatt, and J. Sreevalsan-Nair, *CCESAR: Coastline Classification-Extraction From SAR Images Using CNN-U-Net Combination*, arXiv Preprints, 2025. [Online]. Available: <https://arxiv.org/abs/2501.12384>.
- [NP.9] K. Sama, J. Sreevalsan-Nair, S. Choudhary, S. Nagendra, P. V. Reddy, A. Cohen, U. M. Mehta, and J. Torous, *mindLAMPVis: A Co-Designed Data Visualization Portal to Integrate Clinical Observations from Digital Phenotyping in Schizophrenia*, JMIR Preprints. 14/12/2024:70073, 2024. DOI: [10.2196/preprints.70073](https://doi.org/10.2196/preprints.70073). [Online]. Available: <https://preprints.jmir.org/preprint/70073>.
- [NP.8] J. Sreevalsan-Nair, *Co-Association Matrices in Ensemble Clustering: Diverse Applications and Extensions*, SSRN Preprints, May 2023. [Online]. Available: <https://dx.doi.org/10.2139/ssrn.4448950>.
- [NP.7] J. Sreevalsan-Nair and P. Mohapatra, *Augmented Semantic Signatures of Airborne LiDAR Point Clouds for Comparison*, arXiv Preprints, April 2020. [Online]. Available: <https://arxiv.org/abs/2005.02152>.
- [NP.6] J. Sreevalsan-Nair, R. R. Vangimalla, and P. R. Ghogale, *Estimation of Length of In-Hospital Stay Using Demographic Data of the First 1000 COVID-19 Patients in Singapore*, medRxiv Preprints, April 2020. DOI: [10.1101/2020.04.17.20069724](https://doi.org/10.1101/2020.04.17.20069724).
- [NP.5] J. Sreevalsan Nair, *Paving the Way for Geovisual Analytics*, Advanced Computing & Communications, issue 3, ACCS, Decmeber 2017. [Online]. Available: <https://journal.accsindia.org/paving-the-way-for-geovisual-analytics/>.
- [NP.4] J. Sreevalsan-Nair, "A Survey of Requirements of Multivariate Data and its Visualizations for Analysis of Child Malnutrition in India," in *Data Science Communications*, vol. 1, S. Srinivasa, Ed., IIITB Press, October 2016, pp. 1–26. [Online]. Available: https://www.iiitb.ac.in/gvcl/pubs/2016_SreevalsanNair_preprint_nutrition-survey.pdf.
- [NP.3] B. Kumari and J. Sreevalsan-Nair, *Three-dimensional Visualization of LiDAR Point Cloud Using Structural Feature Extraction*, in Proceedings of NSDI (National Spatial Data Infrastructure) 2013, 2013.
- [NP.2] J. Sreevalsan-Nair, C. S. Co, E. van Nieuwennhuysse, L. Linsen, and B. Hamann, *Visualization of Water Resource Data*, in the Proceedings of UC Davis Student Workshop on Computing, University of California, Davis, 2003.
- [NP.1] J. Sreevalsan-Nair, L. Linsen, B. A. Ahlborn, M. S. Green, and B. Hamann, *Hierarchical Visualization of Large-scale Unstructured Hexahedral Volume Data*, in R. Bajcsy, M. Gross, B. Hamann, K. Joy, O. Staadt, editors, Proceedings of Lake Tahoe Workshop on Collaborative Virtual Reality and Visualization, 2003.

Conference Reports

- [CR.3] A. Moreira, F. Bovolo, A. Plaza, and J. Sreevalsan-Nair, "44th IEEE International Geoscience and Remote Sensing Symposium - IGARSS 2024, Athens, Greece, 7-12 July, 2024 Impressions of the First Days," *IEEE Geoscience and Remote Sensing Magazine*, vol. 12, no. 3, pp. 149–161, 2024. DOI: [10.1109/MGRS.2024.3442820](https://doi.org/10.1109/MGRS.2024.3442820).
- [CR.2] F. Bovolo, J. Sreevalsan-Nair, A. Plaza, H. Yu, and A. Moreira, "GRSS Awards Presented at the IGARSS 2024 Banquet," *IEEE Geoscience and Remote Sensing Magazine*, vol. 12, no. 3, pp. 161–170, 2024. DOI: [10.1109/MGRS.2024.3438611](https://doi.org/10.1109/MGRS.2024.3438611).
- [CR.1] J. Sreevalsan-Nair, A. Kiran, A. Bhattacharya, B. D. Sagar, G. KN, U. Verma, K. Lanka, and S. K. Meher, "InGARSS 2023 in Bangalore: Striking a Balance," *IEEE Geoscience and Remote Sensing Magazine*, vol. 12, no. 3, pp. 180–187, 2024. DOI: [10.1109/MGRS.2024.3437174](https://doi.org/10.1109/MGRS.2024.3437174).

Press Articles

- [PA.2] J. Sreevalsan Nair, *Project-based learning: A game changer*, <https://www.deccanherald.com/education/project-based-learning-a-game-changer-3291527>, November 26, 2024.
- [PA.1] J. Sreevalsan Nair, *The Role of Data Science and Artificial Intelligence in Shaping the Future of Technology*, <https://www.expresscomputer.in/guest-blogs/the-role-of-data-science-and-artificial-intelligence-in-shaping-the-future-of-technology/118165/>, October 30, 2024.