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Education & Training

University of California, Davis CA, USA Computer Science Ph.D., 2002-2007
Thesis: Computational and Interactive Visualization with a Focus on Topological Analysis, Dual Contouring, and Water-resource Data Representation (Advisor: Prof. Bernd Hamann) - https://hdl.handle.net/2027/uc1.x75980

Mississippi State University MS, USA Computational Engg. M.S., 2000-2002
Thesis: Modular Processing of Two-dimensional Significance Maps for Efficient Feature Extraction (Advisor: Prof. David S. Thompson) - https://scholarsjunction.msstate.edu/td/3174/

Indian Institute of Technology Madras TN, India Aerospace Engg. B.Tech., 1996-2000
Senior year project: Displacement-based Polygonal Finite Elements. (Advisor: Prof. G. Subramanian)

Professional Upskilling:

National Law School of India University KA, India Envrionmental Law Postgraduate Diploma, 2022-2023

Research & Professional Experience

Apr 2025 – present	Professor, International Institute of Information Technology, Bangalore
Sep 2017 – Mar 2025	Associate Professor, International Institute of Information Technology Bangalore
Jun 2016	Visiting Scientist, Indian Statistical Institute, Bangalore
Jun 2010 – Aug 2017	Assistant Professor, International Institute of Information Technology Bangalore
Apr 2008 – Apr 2009	Research Associate, Texas Advanced Computing Center, University of Texas at Austin
Feb 2007 – Mar 2008	Scientific Programmer, Enthought Inc., Austin, Texas
Aug 2002 – Dec 2006	Graduate Student Researcher, Institute of Data Analysis and Visualization (IDAV), University of California, Davis
Aug 2000 – Jul 2002	Graduate Research Assistant, Engineering Research Center (ERC), Mississippi State University

Honors, Awards, and Recognition

- Best Paper Award, IEEE International Conference on Vehicular Technology and Transportation System (ICVTTS) 2024
- WiGIS 2024 (Scholarship) Grant for Practitioners and Academics, Women in GIS (WiGIS), 2024
- Felicitation by IEEE Bangalore Section for the successful organization of the conference 2023 IEEE India Geoscience and Remote Sensing Symposium (InGARSS 2023) and the activities of IEEE GRSS Bangalore Section, IEEE, 2023
- Best Paper Award Nomination, 14th International Conference on Knowledge Discovery and Information Retrieval (KDIR), INSTICC, 2022
- Membership Grade Elevation to ACM Senior Member, 2022
- Best Paper Award Nomination, 3rd International Conference on Deep Learning Theory and Applications (DeLTA), INSTICC, 2022
- Best Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), IEEE, 2021
- Best Paper Award Nomination, 1st International Conference on Image Processing and Vision Engineering (IMPROVE), INSTICC, 2021
- Best Paper Award, 2020 IEEE India Geoscience and Remote Sensing Symposium (InGARSS), IEEE, 2020
- Intel India Research Fellowship (for MS student, with travel grant for faculty), Intel India, 2019-20
- Best Paper Award Nomination, 12th International Joint Conference on Computer Vision, Imaging, and Computer Graphics Theory and Applications (VISIGRAPP (3: IVAPP)), INSTICC, 2017
- Early Career Research Award, Science and Engineering Board, Govt. of India, 2017-20
- Membership Grade Elevation to IEEE Senior Member, 2016
- Visiting Scientist, Indian Statistical Institute - Bangalore Center, 2016 (summer)

- International Travel Grant for Young Scientists, Department of Science and Technology, Govt. of India, 2012
- CITRIS Fellowship, The Center for IT Research in the Interest of Society, Univ. of California, 2006

Highlights of Professional Expertise

Jaya Sreevalsan Nair's consolidated research experience is in the interdisciplinary area of **Human-centered Spatio-temporal Data Science**. This involves computer science, computational engineering, geoscience, and population studies, focusing on spatial big data analytics, visual analytics, machine learning, and human-computer interaction.

Jaya's key research contributions are in the exploratory analysis of big data, with a current focus on 3D Light Detection and Ranging (LiDAR) point clouds, natural hazards, and population health. A unique line of work that she pursues is in reverse-engineering of visualizations to extract its data. She is one of the few researchers in the country whose work combines data visualization, computer vision, and 3D spatial data science. Her research aims to inculcate uncertainty estimation in data science workflows involving spatio-temporal data in real-world applications. Jaya's research has been supported by the Department of Science and Technology (DST), and the Science Engineering and Research Board (SERB) under the Government of India, and through industry collaborations. Several of her research articles have been published in IEEE journals (JSTARS, GRSL, TNSRE, CISE) conferences (IGARSS and EMBC), and ACM SIGSPATIAL conference.

Jaya has designed and taught courses in data visualization, computer graphics, scientific computing, and spatiotemporal data analytics. She has also taught core courses, such as operating systems, C++ programming, and multivariate calculus. She has been a resource person for several faculty development workshops and training programs outside her organization for geospatial and bioinformatics domains.

Jaya actively contributes to editorial work and is currently serving as an Associate Editor (AE) for the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS) [2024-], and the Journal of the Indian Society of Remote Sensing (JISRS) [2024-], and as an Academic Editor for PLOS Complex Systems (PCSY) [2023-]. She is a Senior Associate Editor for the IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) after serving as an AE during 2021-24. She was a Section Editor as well as an author for the Encyclopedia of Mathematical Geosciences, 2023.

Jaya is the IEEE Geoscience and Remote Sensing Society (GRSS) Special Awards Committee Chair [2024-], responsible for selecting winners of Early Career, Regional Leader, and David Landgrebe (equivalent to Lifetime Achievement) Awards in the society. She has been serving as an expert member in the committee for "airborne LiDAR" for BIS (Bureau of Indian Standards), Government of India [2021-24]. Jaya has served as the chair of the IEEE Geoscience and Remote Sensing Society (GRSS) Bangalore Section slate for 3 years during 2021-23. She was the general chair for the regional IEEE GRSS conference in India, 2023 IEEE India Geoscience and Remote Sensing Symposium (InGARSS 2023) in the IEEE Region R10 (Asia-Pacific region), held at IIIT Bangalore in 2023.

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[1] excluding paper and poster presentations at conferences and workshops

(a) Publications

Profile pages: ORCiD; Google Scholar; DBLP; Semantic Scholar; ResearchGate; publons; Scopus

Peer-reviewed Journal Articles

[J.13] K. Sama, J. Sreevalsan-Nair, S. Choudhary, S. Nagendra, P. V. Reddy, A. Cohen, U. M. Mehta, and J. Torous, "mindLAMPVis as a Co-designed Clinician-facing Data Visualization Portal to Integrate Clinical Observations from Digital Phenotyping in Schizophrenia: User-centered Design Process and Pilot Implementation," *JMIR Formative Research (in press)*, 2025, Preprint at https://doi.org/10.2196/70073.

[J.12] P. Nileshbhai 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. [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.

[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. 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. 20 230 104, October 2023. DOI: 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. [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. [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.

[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.

[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.

[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.

[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.

[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.

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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[C.20] R. R. Vangimalla and J. Sreevalsan-Nair, "HCNM: Heterogeneous Correlation Network Model for Multilevel 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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

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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. [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. [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.

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[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.

[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.

[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.

[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.

[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.

[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.

[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.

[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.

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[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.

[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.

[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.

[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.

[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.

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[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.

[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.

[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. [Online]. Available: https://arxiv.org/abs/2010.02319.

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[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.

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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 Sysems 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.

[EA.7] R. R. Vangimalla and J. Sreevalsan-Nair, *Construction and Visualization of Diseasome 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 28 th Conference on Intelligent Systems for Molecular Biology (ISMB 2020), July 2020. DOI: 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.cvmp-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.12] S. Kothari, S. Murali, S. Kothari, U. Verma, and J. Sreevalsan-Nair, *Adversarial Robustness of Deep Learning Models for Inland Water Body Segmentation from SAR Images*, arXiv Preprints, 2025. [Online]. Available: https://arxiv.org/abs/2505.01884.

[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. [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.

[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 Nieuwennhuyse, 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.

[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.

[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.

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.

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(b) Research Grants

As Principal Investigator

10. (07/2021 – 05/2022), "Vehicle LiDAR Point Cloud Processing and Analysis," Ignitarium Technology Solutions Pvt. Ltd., (INR 3,50,000), *(Completed)*.
9. (02/2020 – 02/2023), "Data Analysis of Split Questionnaire for Conducting Surveys for Population Studies Using Novel Statistical Measures and Visualizations," Mathematical Research Impact Centric Support (MATRICS) fixed grant scheme, Science and Engineering Research Board (SERB), Government of India, (INR 6,00,000), *(Completed)*.
8. (08/2019 – 07/2020), "Uncertainty Analysis of LiDAR Point Clouds in Autonomous Driving", Intel India Research Fellowship, Intel India, (INR 8,00,000), *(Completed)*.
7. (06/2018-06/2020, and 6-month extension), "Visual Analytics of Population Health Surveys," IBM Shared University Grant, (INR 19,55,000), *(Completed)*.
    - Visualization tool as deliverable: `https://gvcl.shinyapps.io/NFHS4Vis/`
6. (07/2017 – 06/2019), "Visual Analytics of Public Health Data," Foundations of Research in Health Systems (FRHS), India, (INR 10,00,000), *(Completed)*.
5. (05/2017 – 05/2020, and 4-months extension), "Tensor Modeling and Visualization of Three-dimensional Geospatial Datasets," Early Career Research Award (ECRA), Science and Engineering Research Board (SERB), Government of India, (INR 14,83,900), *(Completed)*.
4. (01/2016 – 06/2017), "Visual Analytics for Early Detection of Child Malnutrition," Foundations of Research in Health Systems (FRHS), India, (INR 10,00,000), *(Completed)*.
3. (08/2014 – 07/2017), "Interactive Three-dimensional Visualization of Large-scale ARGO Data," Indian National Center for Ocean Information Services (INCOIS), Ministry of Earth Sciences, Government of India, (INR 40,30,000), *(Completed)*.
2. (01/2014 – 12/2014), "Visualization of Security Analytics," EMC^2-RSA Center of Excellence, (INR 10,00,000), *(Completed)*.
1. (08/2012-08/2014, and 6-months extension), "LAN-based Interactive Three-dimensional Visualization of LiDAR Point Cloud Data," Natural Resources Data Management System (NRDMS) programme (currently, National Geospatial Programme (NGP)), Department of Science and Technology (DST), Government of India, (INR 32,25,000), *(Completed)*.

As Co-Investigator

4. (03/2024-02/2027), "Indian Standards for Mobile LiDAR Surveying and Mapping," DST - National Geospatial Programme under Geospatial Science Development (GSD), *PI: Dr. Manohar Yadav, MNNIT Allahabad*, (INR 75,67,659).
3. (02/2024-02/2027), "VR4CIMT - Virtual Reality-based Compassion and Integrity Training Platform for Doctor-Patient Communications," Technology Innovation Hub (iHub Drishti), IIT Jodhpur and Department of Science and Technology, Government of India *PI: Dr. T. K. Srikanth, IIIT Bangalore; participating institutions – IIIT Bangalore, NIMHANS, Hyperreality Technologies*, (INR 85,00,000).
2. (08/2017-07/2020, and 12-months extension), "High Resolution DNS of 3D-MHD Turbulence with Varying PrM & Spectral, Statistical and Topological Analysis of Magnetic Structures Formed with some Implications to Plasma Fusion Devices," Board of Research in Nuclear Studies (BRNS), Department of Atomic Energy, Government of India, *PI: Dr. Shiva Kumar Malapaka, IIIT Bangalore*, (INR 34,80,000), *(Completed)*.
1. (01/2018-12/2019), "Seed Grant for E-Health Research Center at IIIT Bangalore", Department of Health and Family Welfare, Government of Karnataka, *PI: Dr. T. K. Srikanth, IIIT Bangalore*, (INR 2,00,00,000, infrastructural grant), *(Completed)*.

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(c) Invited Talks[2]

60. Invited Talk at the Faculty Development Program (FDP) on Empowering Vision and Voice through Generative AI and LLM, Alliance School of Advanced Computing, Alliance University, on "Training LiDAR Point Clouds: A Computer Vision Approach," May 06, 2025.

59. Invited Talk at the NCESS-Earth Science Forum (ESF) seminar, National Center for Earth Science Studies (NCESS), on "Machine Learning-based Multi-hazard Susceptibility Mapping," April 30, 2025.

58. Invited Talk at the IEEE GRSS-GSAC IIST workshop, Indian Institute of Space Science and Technology (IIST), on "Uncertainty in Data Science Workflows for Geospatial Data," April 29, 2025.

57. Invited Talk at the one week national workshop on Crop Informatics, Drone Images/Videos, and Generative Pre-Trained Transformers (GPTs) on "AI Applications in Crop Informatics," December 18, 2024.

56. Keynote at Vexcel Open Day India on "A National Agenda – 'by AI/ML' and 'for AI/ML'," October 09, 2024.

55. Invited Talk at the Disaster Resilient and Research Foundation Talk Series on "Earthquake Susceptibility Mapping: In the Context of Single and Multiple Hazards," in the "Earthquake Preparedness and Response" theme, September 30, 2024.

54. Invited Talk at the Virtual Faculty Development Program on Exploring Advanced Machine Learning Techniques, Jain University, on "Machine Learning in Geospatial Applications," June 25, 2024.

53. Invited Talk at the Faculty Development Program on Data Exploration, Feature Engineering, and Visualization, RMK College of Technology, on "Data Visualization," "Graph Visualization," and "Feature Engineering," June 03, 2024.

52. Invited Talk at the HAL Management Academy for a session on Mastering the Art of Research Paper Writing for Designers, "The Research Journey: From Concept to Completion," May 03, 2024.

51. Chief Guest Address at the IEEE International Conference on Emerging Technologies in Computer Science for Interdisciplinary Applications (ICETCS 2024), "Interdisciplinary Perspectives on Research in Computer Science," April 22, 2024.

50. Invited Talk at the GIS Cell, MNNIT Allahabad, "Making Sense of LiDAR Point Clouds," April 12, 2024.

49. Keynote Talk at the International Conference on Contemporary and Sustainable Infrastructure at SJBIT Bangalore, "Advances in Learning Models for Multi-Hazard Susceptibility Mapping," March 15, 2024.

48. Talk at Workshop on Digital Technologies in Psychiatry organized by NIMHANS, University of Newcastle and NEESAMA, on "The Role of AI in Personalized Mental Healthcare," March 08, 2024.

47. Lightning Talk at the Monthly Lightning Talk Series by the WiGIS Professional Development Committee, "Divide and Conquer for Geospatial Big Data Analytics," February 02, 2024.

46. Invited Plenary Talk at the National Conference on Applied Computational Intelligence 2023 (NACI-2023) in association with INSA, New Delhi and organized by JSS Academy of Technical Education, "Ensemble Methods for Point Cloud Analysis," December 22, 2023.

45. Keynote Talk at the 6th International Conference on Computational Intelligence, Cyber Security and Computational Models (ICC^3-2023), "Ensemble Methods in Spatial Applications," December 16, 2023.

44. Invited Talk at Mphasis, "AI systems for geometry extraction from automotive-environment-sensing," July 28, 2023.

43. Invited Talk at the 5-day Faculty Development Program (FDP) on Research Insights in Civil Engineering (RICE 2023), NIE Mysuru, "Ensemble Methods in Geospatial Applications," July 25, 2023.

[2] excluding paper and poster presentations at conferences and workshops

42. Invited Talk at the Workshop on Geo-Spatial Data Science, Dept. of Mathematics and Statistics, IIT Tirupathi, "Understanding Uncertainty in Learning Methods for Geospatial Data Analysis," December 14, 2022.

41. Talk at IIIT-B in the Samvaad Talk Series, "Extracting geometry to understand the data from automotive-environment-sensing," November 14, 2022.

40. Invited Talk at the 2022 International Workshop on Remote Sensing and Societal Applications, IEEE GRSS Kolkata Chapter, "Probabilistic Analysis Using Ensemble Methods in Geoscientific Applications," September 28, 2022.

39. Invited Talk in the CS Katha Bartha Series, School of Computer Science, NISER Bhubaneshwar, "Multiscale Computational Thinking in Science and Engineering," June 29, 2022.

38. Invited Talk at Student Paper Presentation Competition in IEEE GRSS Bangalore Section, "Academic Research: How to Train Your Dragon," June 04, 2022.

37. Talk at IIIT-B in the Samvaad Talk Series, "Multiscale Computational Thinking in Data Science," May 16, 2022.

36. Talk at IIIT-B during a visit by Power Grid (PGCIL) Learners' Team, "Visualization and Analysis of LiDAR Point Clouds (for Remote Sensing and Autonomous Driving)," March 23, 2022.

35. Invited Speaker at ATAL Faculty Development Program (FDP) on *Foundations of Data Science and Machine Learning*, "Heterogeneous Urban Data Analysis and Visualization," December 27, 2021.

34. Invited Speaker at one-week Short Term Training Program (STTP) on *Computational Intelligence in Remote Sensing*, "Deep Learning for Airborne LiDAR Point Cloud Analysis for Remote Sensing," December 07, 2021.

33. Invited Speaker at Geospatial Intelligence Symposium, IEEE GRSS Mumbai Chapter, "Deep Learning for Airborne LiDAR Point Cloud Analysis for Remote Sensing," December 04, 2021.

32. Expert Talk at RCOEM ACM Student Chapter, "Multiscale Methods for Spatial Data Analysis in Diverse Applications," November 01, 2021.

31. Session Talk at Short Term Course (STC) on Data Analytics and Predictive Technologies, IDAPT, IIT BHU, "Applications of clustering and classification in LiDAR point cloud analysis and brain networks," July 08, 2021.

30. Talk at IEEE Data & Storage Symposium (DSS) 2021, "Apache Spark-Cassandra Integration for Large-scale LiDAR Point Cloud Analysis," June 30, 2021.

29. Talk at 2-day Workshop on Data Science and Curation: Spatial Data Science, "Multiscale Methods in Spatial Data Science," June 25, 2021.

28. Talk at Data Science Webinar Series, MANAV – the Human Atlas Initiative, "Network Science for Functional Segregation of Human Brain," February 18, 2021.

27. Talk at Spatial Talks Webinar, by Wo-Men Geospatial Coterie, "Geospatial and Internet of Things," February 13, 2021.

26. Talk at the NeurIPS Bangalore Meetup, "Hierarchical Organization of Functional Segregation of the Brain," December 18, 2020.

25. Webinar at the Atria Institute of Technology, Department of Computer Science and Engineering, "Data Visualization (Treemaps, Heatmaps, Bar Charts)," November 28, 2020.

24. Session talk at the AICTE ATAL Sponsored Faculty Development Programme on Advanced Geocomputational Techniques, "Scientific Computing for LiDAR Point Cloud Processing," November 04, 2020.

23. Talk at WiDS Mysuru Meetup 2020, "What can the shape of neighborhood show-and-tell?," September 06, 2020.

22. Keynote talk at AICWiC 2020, ACM-W, "Data Dissemination during COVID-19: The Rise of Visualizations!," September 05, 2020.

21. Talk at ACM-W Graduate Cohort, "Online Presence and Personal Branding: You are Your Brand!," July 24, 2020.

20. Talk at IIIT-B in the Samvaad series, "Geometric Signatures of Airborne LiDAR Point Clouds," Bengaluru, Karnataka, India, February 17, 2020.

19. Invited (plenary) talk at the 4th International Conference on Computational Intelligence, Cyber Security & Computational Models (ICC3) 2019, "Exploiting Spatial Locality in Novel Applications", Coimbatore, Tamil Nadu, India, December 20, 2019.

18. Project showcase at IBM annual University Relations event, Gratitude, "Visual Analytics of Population Surveys", Bengaluru, India, November 21, 2019; with Harshitha Ravindra.

17. Poster presentation at Intel India Research Colloquium, "Uncertainty Analysis in Point Cloud Classification: Entropy in Geometric Classification and Semantic Homogeneity", Bengaluru, India, October 22, 2019; with Pragyan Mohapatra.

16. Invited talk at the Workshop for Women in Data Science and High Performance Computing (WDSHPC18), "Visual Analytics is Komorebi: For Exploring Spatial Relationships in Data and for Leveling the Playing Field in STEM Careers," HiPC 2018, Bengaluru, Karnataka, India, December 17, 2018.

15. Tutorial at the third International Conference on Intelligent Information Technologies (ICIIT 2018), "Visual Analytics: Bringing Data to Life," College of Engineering, Guindy, Tamil Nadu, India, December 10, 2018.

14. Keynote talk at the Indo-US Workshop on Modeling Dynamics, Statistical Inference, and Prediction of Infectious Diseases (WMDSIP-ID), "Visualization of Epidemiological Networks: A Case of Exploiting Spatial Locality," Sri Sathya Sai Institute of Higher Learning, Ananthapur, Andhra Pradesh, India, August 14, 2018.

13. Talk at IIIT-B in the Samvaad series, "Using Spatial Locality for Visual Analytics," Bengaluru, Karnataka, India, April 30, 2018.

12. Talk on "Visual Analytics of Airborne LiDAR Point Clouds," at the one-day workshop on Satellite Remote Sensing and Image Analysis, Activities at the Bangalore Section IEEE GRSS Chapter at ISI Bangalore, India, June 12, 2017.

11. Talk on "Visual Analytics in the Time of Big Data," at the Big Data Workshop at IIIT-B, India, April 19, 2017.

10. Dagstuhl seminar on "Multidisciplinary Approaches to Multivalued Data: Modeling, Visualization, Analysis", April 2016 – talk on "Substitutability of Symmetric Second-order Tensor Fields: An Application in Urban LiDAR 3D Point Cloud".

9. Data Science & Big Data Analytics (DSBDA 2015), C-DAC Bangalore, August 2015 – "Focus+Context Techniques for Visualizing Big Data".

8. DST (Department of Science and Technology, Govt. of India) National Airborne Lidar Meeting, IIT Kanpur, January 2015 – "Remote Interactive Visualization of Parallel Implementation of Structural Feature Extraction of Three-dimensional LIDAR Point Cloud".

7. ACM-W India Celebrations of Women in Computing (AICWIC 2014), September 2014 – "Visualization: Above All Else Show the Data".

6. Visualization and Graphics Lab, Indian Institute of Science, July 2012 – "Isosurface Extraction from Hybrid Unstructured Grids Containing Pentahedral Elements".

5. Monsanto Research Center, Bangalore, February 2012 – "Applying Non-traditional Visualization Techniques for Bioinformatics Datasets".

4. M. Esteva, W. Xu, J. Sreevalsan-Nair, A. Athalye, and M. Hade, Computational Analysis and Visualization of Electronic Records Collections, presented at the Joint Annual Meeting of the Society of American Archivists and the Council of State Archivists, Austin, TX, August 2009.

3. M. Esteva, W. Xu, J. Sreevalsan-Nair, M. Hade, and A. Athalye, Finding Narratives of Activities through Archival Bond in Electronically Stored Information (ESI), presented at the Global E-Discovery/E-Disclosure Workshop: A Pre-Conference Workshop at the 12th International Conference on Artificial Intelligence and Law, Barcelona, Spain, August 2009.

2. J. Sreevalsan-Nair and W. Xu, Analysis of Evacuation Traces, presented at IEEE VAST Conference Compendium, 2008.

1. E. van Nieuwenhuyse, J. Sreevalsan-Nair, I. Hotz, L. Linsen, and B. Hamann, Demonstration of an interactive data visualization tool for water resource monitoring networks in the Delta and its catchment, laptop demonstration at Interagency Ecological Program (IEP) Annual Workshop 2007, California, 2007.

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(d) Professional Service

Conferences and Journals

- ***Editorial Board Member***:
  - **Senior Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)**, (2025-).
  - **Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)**, for two consecutive terms (2021-2022, 2023-2024).
  - **Academic Editor, PLOS Complex Systems (PCSY)** (2023-).
  - **Associate Editor, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)** (2024-).
  - **Associate Editor, Journal of the Indian Society of Remote Sensing (JISRS)** (2024-).
  - Section Editor, Encyclopedia of Mathematical Geosciences, Encyclopedia of Earth Sciences Series, Springer Cham, https://doi.org/10.1007/978-3-030-26050-7_24-1 2021-2022.
- Guest Editor of Special Issues:
  - IEEE JSTARS, Special Issue on "IEEE India Geoscience and Remote Sensing Symposium (InGARSS 2023)," (2024-).
- ***Conference/Workshop Organization***:
  - IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Symposium Award Committee Member (2024-).
  - IEEE International Geoscience and Remote Sensing Symposium (IGARSS) Student Paper Competition Committee Member (2024-).
  - **General Chair: 2023 IEEE India Geoscience and Remote Sensing Symposium (InGARSS) 2023 (Conference ID 59135, regional IEEE GRSS conference)** at IIIT Bangalore during December 10-13, 2023.
  - IEEE MIGARS (Machine Intelligence in GeoAnalytics and Remote Sensing) Steering Committee Member (2023-).
  - Proposal Bidding (as Conference Chair): IEEE International India Geoscience and Remote Sensing Symposium (InGARSS) 2023, August-December 2022.
  - Technical Program Committee Co-chair: IEEE MIGARS 2023.
  - Track Chair: "Geoscience and Remote Sensing Technologies" at the International Conference on Electronics, Computing and Communication Technologies, IEEE CONECCT 2022.
  - Proposal Bidding (as Finance Chair): IEEE Geoscience and Remote Sensing Symposium (IGARSS) for 2025, July 2021.
- *Program Committee Member*:
  - Conferences [Major]: Complex Networks [2020-2025], ISVC [2018-2025], IEEE VIS Workshop on Topological Data Analysis and Visualization [2022-2024], IEEE International Conference on Intelligent Transportation Systems (ITSC) [2023], PReMI [2023], Eurovis Short Papers [2013, 2018-2020].
  - Conferences [Others]: ICCIDA [2024], ISEC [2022-2024], HiPC Student Research Symposium [2017-2019, 2021-2022], Workshop on MINDS at the International Conference on COMmunication Systems and NETworkS (COMSNETS) [2020-2022], ACN (VIT, Chennai) [2020], AICWIC 2013, ICFOCS 2011.
- *Reviewer*:

  Written as journal/conference name [years active]
  - Journals: PLOS One [2024], CGA (Computer Graphics and Applications) [2024], PLOS Complex Systems [2024], TCSVT (IEEE Transactions on Circuits and Systems for Video Technology) [2018-2024], TVCG (IEEE Transactions on Visualization and Computer Graphics) [2013-2015, 2017-2018, 2022-2023], TIP (IEEE Transactions on Image Processing) [2023], RSASE (Remote Sensing Applications: Society and Environment) [2021-2022, 2024], JSED (Journal of Social and Economic Development) [2023-2024], IDM (Infectious Disease Modeling) [2024], Data in Brief [2024], EcoInf (Ecological Informatics) [2022-2023], IJHC (International Journal of Human-Computer Interaction) [2022-2023], CMPB (Computer Methods and Programs in Biomedicine) [2023], Applied Research (Wiley Journal) [2023], TGRS (IEEE Transactions on Geoscience and Remote Sensing) [2018-2020, 2022], TCSS (IEEE Transactions on Computational Social Systems) [2021-2022], Heliyon [2021-2022], Displays [2022], Scientific Data [2022], JDSA (International Journal of Data Science and Analysis) [2021-2022], Computers and Graphics

[2021-2022], Journal of Systems and Software [2022], Heliyon [2021], EPJST [2021], Visual Informatics [2021], TSMC (IEEE Transactions on Systems, Man, and Cybernetics: Systems) [2021], Human Brain Mapping [2020], JSTARS (IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing) [2018-2020], Sadhna [2020], GRSL (IEEE Geoscience Remote Sensing Letters) [2019], Fluid Dynamics Research [2019], CGF (Computer Graphics Forum) [2013].
  - Conferences [Major]: TopoInVis [2022-24], IGARSS [2023-2024], ICVGIP [2014, 2016, 2018, 2022-2024], IEEE VAST Challenge [2010-2011, 2017-2018, 2020, 2022-2023], Eurovis [2014-2016, 2018-2019, 2022-2023], IEEE Infovis [2013-2015, 2017, 2020], IEEE VAST [2013-2015, 2017, 2020], IEEE Vis/SciVis [2011, 2013, 2015, 2017, 2020], VizSec [2018], EuroRV3 2017, Eurovis Short Papers [2016-2017], IEEE Visualization VIP 2016, PacificVis Notes 2016, IEEE Visualization Posters [2010, 2011], PacificVis [2011, 2014, 2015, 2018].
  - Conferences [Others]: AI-ML Systems 2022, INDICON 2016, ISEC 2016, ADCOM 2016, COMAD 2016, CONECCT 2015, BDA 2013, ICDCIT 2012, DNIS 2011.
  - Grant Proposals and Completion Reports: KSCSTE (Kerala State Council for Science, Technology and Environment) [2023], DST (Department of Science and Technology, Government of India) [2022], TIH-ISI (Technology Innovation Hub at Indian Statistical Institute) [2022], NRDMS (Natural Resources Data Management System – a programme of Department of Science and Technology, Government of India) [2016-18, 2020]; BRFST [2015]; CEFIPRA [2012].
- Other Relevant Conference/Event Organization Activities:
  - Organizing Committee Member: 3D Vision Summer School 2024, co-organized by IIIT Hyderabad, IIIT Bangalore, and IIT Jodhpur, May 2024.
  - Awards Committee Co-chair: IEEE International India Geoscience and Remote Sensing Symposium (InGARSS) 2021, December 2021.
  - Local Arrangements Co-chair: 8th ACM IKDD CoDS and 26th COMAD, ACM India Joint International Conference on Data Science & Management of Data, January 2021.
  - Co-organizer for a workshop on "Women in Computing" at the 26th edition of the IEEE International Conference on High Performance Computing, Data and Analytics, December 2019.
  - Co-chair for ACM Siggraph (Bangalore chapter) 2013-2014.
  - Academic/Research Committee Member: Grace Hopper Conference India (GHCI) 2011.
  - Program Co-chair for ACM Siggraph (Bangalore chapter) Elements 2011.
  - Session Chair: IVAPP 2023, DeLTA 2022, GISTAM 2021, IVAPP 2018, IGARSS 2017, BDA 2013, ICFOCS 2011, GRAPP 2006.
  - Panel Moderator: "Teaching as a Rewarding Career," GHCI 2011.

Professional Society Memberships and Activities

- ACM Senior Member (since 2022)
- IEEE Senior Member (since 2016)
  - Global Society Activities:
    - **IEEE GRSS Special Awards Committee Chair, (2024-)** – ex-officio IEEE GRSS AdCom Non-voting Member
  - Regional/Local Chapter Activities:
    - Chair, IEEE GRSS Bangalore Section Slate and Execomm (2021-2023).
    - Conceptualization and Coordinator, Monthly talk series, "Bhoo-Mandal Talk Series" at IEEE GRSS Bangalore Section (2020-2023).
  - Society Membership - CAS, CS, EMBS, GRSS
- INSTICC Member
- Women in GIS (WiGIS) Member

Contributions as Technical Expert

- **Interview Panelist of Selection Committee for "Engineering and Mathematics" applications for Rhodes Scholarship, Rhodes Trust, India, October 2024.**
- Panelist of High Power Screening Committee (HPSC) meeting of iDEX, Prime X challenge of the Defence Space Agency, for Mission DefSpace, for Problem Statement of "Geo-spatial Artificial Intelligence based Multi-Sensor(Optical/Radar) Siting Simulator," Ministry of Defence, Government of India, September 2024.
- Expert Member of Project Screening Committee for Reviewing Project Proposals for "Geospatial Technology

and Solutions" under National Geospatial Programme division, Department of Science & Technology, Government of India, September 2024.
- Invited Panelist for a discussion on "Research issues in Geospatial Science & Technology: Future Roadmap," NGP-NSDI User Meet, National Geospatial Programme Outreach at Geosmart 2023, Department of Science & Technology, Government of India, October 2023.
- Expert Member of Screening Committee for Shortlisting Project Proposals for "Geospatial Science Development" under National Geospatial Programme division, Department of Science & Technology, Government of India, July 2023.
- Invited Panelist for a discussion dedicated to young leaders, entrepreneurs, scholars, etc. to showcase their working experience and contribution to the growth of remote sensing and allied technologies in India and abroad, at the Golden Jubilee Celebration of the Indian Society of Remote Sensing (ISRS) and the Journal of the Indian Society of Remote Sensing (JISRS), at the Indian Institute of Remote Sensing (IIRS), Dehradun, on February 24, 2023. The 8-member panel had participation from academia, industry (startups), and government agencies and the discussion was moderated by Prof. Bharat Lohani (IIT Kanpur).
- Graphics Expert, Committee for RFP/EoI Preparation for Implementing AR/VR Schemes Content of Tourist Sites of State of Karnataka, Department of Tourism, Government of Karnataka, 2022.
- **Program Committee Member of Graphics Replicability Stamp Initiative (GRSI), International Evaluation Committee (http://www.replicabilitystamp.org/), 2021-.**
- **Member of Expert Panel, Geospatial Information Sectional Committee, LITD 22/Panel 3 'LiDAR' of Bureau of Indian Standards (BIS), Government of India, 2021-.**
- Member of the Project Screening Committee, for R&D proposals for "Geospatial Analytics for Revival and Restoring the Economic Growth in Post COVID-19 Scenario," National Geospatial Programme, Department of Science & Technology, Government of India, February-July 2021.
- Member of Expert Committee for "Capacity Building and Training on Geospatial Sciences & Technology," National Geospatial Program, Department of Science and Technology, Government of India, January 2021-January 2024.
- Invited member for brain-storming session on "Spatial Data Infrastructures for Smart City Development" by Department of Science & Technology, Government of India, September 2016.
- Invited member of a decision-making team for the revision of courses in Computer Graphics across India and revision of syllabus for basic Computer Graphics course listed in course catalog by AICTE (All India Council for Technical Education, Government of India), 2011-2012.

Service to External Academic Institutions

- Ph.D. thesis examination:
  - External examiner for Ph.D. thesis examination of Mr. Prashant Kumar, School of Information Technology, Indian Institute of Technology Delhi, May 2025, Thesis title: "Learning Based Approaches for LiDAR Navigation."
  - External examiner for Ph.D. thesis examination of Mr. Sandeepan Dhoundiyal, Center of Studies in Resources Engineering, Indian Institute of Technology Bombay, March 2025, Thesis title: "Interpretable AI for Mapping Martian Mineralogy from Space-Borne Hyperspectral Data."
  - External examiner for Ph.D. thesis examination of Mr. Upkar Singh, Department of Computer Science and Automation, Indian Institute of Science, Bangalore, January 2025. Thesis title: "Feature Tracking and Visual Analysis of Temporal Scalar Fields in the Ocean."
  - External examiner for Ph.D. thesis examination of Ms. Arshveer Kaur, Department of Computer Science and Information Systems, BITS Pilani, Pilani, June 2024; thesis viva voce, September 2024. Thesis title: "Deep Learning Models for Satellite Image Time Series Analytics for Earth Observation Applications."
  - External examiner for Ph.D. thesis examination of Mr. Dheerendra Pratap Singh, Department of Civil Engineering, MNIIT, Allahabad, January 2024; thesis viva voce, April 2024. Thesis title: "Airborne Laser Scanning Point Cloud Segmentation and Geographic Objects Identification Using Deep Learning."
  - External examiner for Ph.D. thesis examination of Ms. Seema B. Siledar, Department of Computer Science and Engineering, Dr. Babasaheb Ambedkar Marathwada University, Pune, November 2023. Thesis title: "Distortion Free Watermarking for Verifying Integrity of Outsourced Relational Databases."
  - External examiner for Ph.D. thesis examination of Ms. Dimple A. Shajahan, Department of Engineering Design, IIT Madras, August 2021; thesis viva voce, October 2021. Thesis title: "Attention-based Deep

Learning Approaches towards Classification, Retrieval and Shape Completion of ALS Roof Point Clouds."
  - External examiner for pre-Ph.D. examination of Dr. Eesha Sharma, at the National Institute of Mental Health and Neuro Sciences (NIMHANS), April 2019. Thesis title: "Environmental Determinants of Adolescent Temperament."
  - External viva examiner for Ph.D. candidate, Devi Sudheer Kumar CH, Sri Sathya Sai Institute of Higher Learning, Prashanthi Nilayam, Andhra Pradesh, India, October 2012. Thesis title: "Topology and Routing Aware Mapping on Parallel Processors."
- Masters thesis examination:
  - External examiner for M.S. thesis examination of Mr. Dhawal Sirikonda, Computer Science, IIIT Hyderabad, Telangana, June 2023. Thesis title: "Real-time Rendering of Arbitrary Surface Geometries on PRT Using Learnt Transfer."
  - External thesis examiner for M.Engg. candidate, Kanuj Kumar, Indian Institute of Science, Karnataka, January 2013. Thesis title: "Reconstruction of 3D Neuronal Structures."
- Board of Studies:
  - Expert Panel Member of the Board of Studies, School of CSA, REVA University, Bangalore for the Master of Computer Applications (MCA) Programme (2025-2027).
  - External Member of the Board of Studies, Department of Master of Computer Applications, MS Ramaiah Institute of Technology, Bangalore for the Master of Computer Applications (MCA) Programme (2025)
  - Member of the Board of Studies, Department of AI & ML, BMSIT & M, Bangalore (2024-).
  - Member of the Board of Studies, Data Science Cluster, BMS College of Engineering, Bengaluru (2023-2026).
  - Special Invitee, Board of Studies, School of Engineering and Technology, CMR Unversity, Bengaluru (June 2022).
  - Member of the Board of Studies, Central University of Karnataka, Kalaburagi (2020-2023).
- External expert member:
  - External expert to vet the proposed curriculum of undergraduate CSE (autonomy) batch of 2023, TKM College of Engineering, Kollam, Kerala, April 2023.
  - External Expert Member, Research Review Committee (RRC), Department of IT, MGM University, Aurangabad, May 2021 - May 2022.
  - Expert member of CSE Online Faculty Recruitment Board, Presidency University, March 2021, May 2021.
  - External expert for “Analytics” in faculty selection panel, at Narsee Monjee Institute of Management Studies, Bangalore, in July 2019.
  - External examination question paper setter for course 18CSE104 – Big Data Analytics, at Nitte Meenakshi Institute of Technology, Bangalore, in January 2019.
  - External thesis examiner for Ph.D. candidate, Ms. Nisha Jain, at Indian Institute of Technology, Delhi – thesis examination in Sep 2016, thesis defense in December 2016.
  - External expert in selection committees for Project-Linked-Person (research associate) at ISI Bangalore, August 2015, April 2016, May 2016.

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(e) Thesis Supervision/ Technical Mentoring

Thesis Supervisor for Doctoral Students (Completed/in the Process of Graduation)
(in the reverse chronological order of completion of graduation requirements)

8. Vikas Vazhayil, Doctor of Philosophy (2016-) *(co-supervisor since 2024; supervisor: Prof. T. K. Srikanth)* Thesis title: *"Computational Methods for Solving Problems in Neuroscience,"* IIIT-B.

7. Aswathi Mundayatt Valappil, Doctor of Philosophy (2024-)
Thesis title: *"Data Parallelism for Machine Learning-based Multi-Hazard Susceptibility Mapping,"* IIIT-B.
(Pursued Master of Science by Research program during 2022-24, and discontinued upon admission to Ph.D. program along with credit transfer from the Masters program.)

6. Ramesh Naidu Laveti, Doctor of Philosophy (2022-)
(co-supervisor: Prof. T. K. Srikanth), Thesis topic: "Few-Shot Learning for Inferences from Biomedical Data of Human Brain," IIIT-B.

5. Beryl Gnanaraj, Doctor of Philosophy (2021-)
Thesis topic: *"Gaze Tracking for Respondent Cognitive Load Estimation for Population Healthcare-related Browser Applications,"* IIIT-B.

4. Ancy Thomas, Doctor of Philosophy (2021-)
Thesis topic: *"Data Fusion for Deep Learning-based Classification of SAR-MSI Satellite Images,"* IIIT-B.

3. Harshitha Ravindra, Doctor of Philosophy (2018-)
Thesis topic: *"Enhancing Spatial and Visual Analytics of Large-Scale Population Health Surveys through Advanced Grouping Strategies," (submitted for examination in August 2024)*, IIIT-B.

2. Rani Reddy V., Doctor of Philosophy (2016-2021)
Thesis title: *"Novel Uses of Correlation Networks and Consensus Node-Communities for Biomedical Data Analysis," (completed in August 2021)*, IIIT-B.
    - *First job after graduation*: Data Consultant at ZS Associates

1. Joy Prabhakaran, Doctor of Philosophy (2012-2018) *(co-supervisor since 2015; supervisor: Prof. P. G. Poonacha)*, Thesis title: *"Novel Techniques in Image Zooming and Hierarchical Multi-resolution Image Representation," (completed in January 2018)*, IIIT-B.
    - *First job after graduation*: Professor, Kammavari Sangha Institute of Technology (KSIT)

Thesis Supervisor for Masters Students (Completed/in the Process of Graduation)
(in the reverse chronological order of completion of graduation requirements)

17. Birendra Kumar, Master of Science by Research (2024-), Thesis title: *"Visual SLAM for UAV Camera-LiDAR Dataset in Outdoor Environments with Canopy,"* IIIT-B.

16. Krishnakumar N, Master of Science by Research (2024-), Thesis title: *"Analytics for Creating Benchmark UAV LiDAR Point Cloud Dataset of Outdoor Environments with Canopy,"* IIIT-B.

15. Butani Prince Nileshbhai, Master of Science by Research (2022-), Thesis title: *"Automating Segmentation of Choropleths and Isarithmic Maps,"* IIIT-B.

14. Dhvani Katkoria, Master of Science by Research (2019-2022), Thesis title: *"Spatiotemporal Analytics of LiDAR Data for Environmental Perception to Assist Autonomous Driving," (completed in October 2022)*, IIIT-B.
    - First job after graduation: Senior Engineer, Ignitarium

13. Daggubati Siri Chandana, Master of Science by Research (2019-2022), Thesis title: *"Chart Decode: An Automated System for Data Table Extraction and Summary Generation from Chart Images," (completed in May 2022)*, IIIT-B.
    - First job after graduation: Software Engineer, Cisco

12. Satendra Singh, Master of Science by Research (2017-2021), Thesis title: *"A Distributed System for Multiscale Analysis and Visualization of Large-scale Airborne LiDAR Point Clouds," (completed in November 2021)*, IIIT-B.
    - Part-time student; job at the time of graduation: CTO and Architect, Propelld

11. Komal Dadhich, Master of Science by Research (2018-2021), Thesis title: *"A Semi-automated Algorithm for Data Extraction from Images of Bar Charts and Scatter Plots Using Tensor Fields," (completed in June 2021)*, IIIT-B.
    - First job after graduation: Software Engineer, Cisco

10. Ankita Christine Victor, Master of Technology (2018-2019), Thesis title: *"Synthesis of Three-dimensional Virtual Worlds from Monocular Images of Urban Road Traffic Signs,"(completed in June 2019)*, IIIT-B.
    - First job after graduation: Software Engineer, Microsoft

9. Dattanand Arun Raykar, Sponsored Master of Technology (with Samsung India Pvt. Ltd.) (2018-2019), Thesis title: *"Realistic Cloth Simulations Using Data-driven Upsampling," (completed in June 2019)*, IIIT-B.
    - Part-time student; job at the time of graduation: Senior Chief Engineer, Samsung R&D Institute India

8. Gandhi Kishor Addanki, Sponsored Master of Technology (with Samsung India Pvt. Ltd.) (2015-2017), Final Project title: *"Three-dimensional Model Visualization in a Mobile VR Environment," (completed in May 2017)*, IIIT-B.
    - Part-time student; job at the time of graduation: Principal Engineer, Samsung R&D Institute India

7. Siba Prasad Samal, Sponsored Master of Technology (with Samsung India Pvt. Ltd.) (2015-2017), Thesis title: *"Parallel Implementation of a Random Accessible Progressive Compression Algorithm for Polygonal Meshes," (completed in May 2017)*, IIIT-B.
    - Part-time student; job at the time of graduation: Technical Manager, Samsung Electronics

6. Raghavan Vellappan, Sponsored Master of Technology (with Samsung India Pvt. Ltd.)((2015-2017), Thesis title: *"Progressive Compression Algorithm for Faster Transmission of 3D Mesh Data," (completed in May 2017)*, IIIT-B.
    - Part-time student; job at the time of graduation: Senior Technical Manager, Samsung Electronics

5. Beena Kumari, Master of Science by Research (2013-2016), Thesis title: *"Visualization Techniques in Classification of 3D LiDAR Urban Point Cloud," (completed in June 2016)*, IIIT-B.
    - First job after graduation: Software Engineer, Continental

4. Pinge Anuja Achyut, Master of Technology (2014-2015), Thesis title: *"Isosurface Extraction Using Marching Cubes and Contour Trees," (completed in June 2015)*, Goa University.
    - First job after graduation: PhD Scholar, BITS Pilani Goa Campus

3. Amit Tomar, Master of Technology (2014-2015), Thesis title: *"Augmenting NodeTrix for Effective Small World Network Visualization," (completed in June 2015)*, IIIT-B.
    - First job after graduation: Technology Lead, Avataar

2. Shivam Agarwal, Master of Technology (2014-2015), Thesis title: *"Visualization of Hard Clustering of Document Collections," (completed in June 2015)*, IIIT-B.
    - First job after graduation: Research Associate, IIIT Bangalore

1. Saima Parveen, Master of Science by Research (2011-2013), Thesis title: *"Visualization of Transformation of Graphs Based on Similarity Functions," (completed in June 2013)*, IIIT-B.
    - First job after graduation: Member of Technical Staff, LT Research

Supervisor and Mentor for Staff Members of Research Projects

16. Ms. Beryl Gnanaraj, IBM and FRHS projects, 09/2020 - 08/2021.
15. Ms. Chayanika Devi, SERB and EHRC projects, 03/2020 - 09/2020.
14. Ms. Kunika Valecha, MINRO project, 08/2019 - 07/2021.
13. Ms. Pragyan Mohapatra, MINRO and Intel projects, 08/2018 - 12/2020.
12. Ms. Harshitha Ravindra, EHRC project, 08/2018 - 07/2019.
11. Mr. Bhargav Ram K. S., IBM project, 07/2018 - 07/2019.
10. Ms. Minerva Panda, IBM project, 07/2018.
9. Ms. Shivangi Motwani, SERB project, 01/2018 - 06/2019.
8. Ms. Kuhu Gupta, FRHS project, 07/2017 - 05/2018.
7. Mr. Nilay Engineer, INCOIS project, 07/2016 - 06/2017.
6. Mr. Shivam Agarwal, INCOIS project, 07/2015 - 06/2017.
5. Mr. Raghavendra G. S. , INCOIS project, 07/2015 - 07/2016.
4. Ms. Beena Kumari, NRDMS and EMC^2 projects, 04/2013 - 05/2016.
3. Mr. Avijit Ashe, NRDMS project, 01/2014 - 02/2015.
2. Ms. Pavithra Rajendran, NRDMS project, 11/2013 - 04/2014.
1. Dr. Kiruba Bagirathi, NRDMS project, 08/2012 - 08/2013.

Post-doctoral Researchers

1. Dr. Kiruba Bagirathi, Doctor of Philosophy (Mathematics), on UGC postdoctoral fellowship (2014-2016).

Interns

19. Ms. Swetha Manivasagam, Bachelor of Engineering, CSE (Year 4), PSG College of Technology, Coimbatore, 12/2024.
18. Mr. Surya G S Chitti, Bachelor of Engineering, Civil Engg. and M.Sc., Mathematics (Year 4), BITS Pilani Hyderabad, 07/2024.
17. Mr. Shreyansh Shrivastava, Master of Technology, CSE (Year 1), IIIT Hyderabad, 06/2024.
16. Ms. Maanasa Rajaraman, Integrated M.Sc, Theoretical Computer Science (Year 3), PSG College of Technology, Coimbatore, 05/2024.
15. Mr. Anirudh T N, Bachelor of Engineering, Computer Science (Year 2), SSN College of Engg, Chennai, 07/2021.
14. Ms. Astha Jakher, Integrated M.Sc., Economics (Year 3), IIT Kharagpur, 05/2020.
13. Ms. Keerthana M., Integrated M.Sc., Data Science (Year 3), PSG College of Technology, Coimbatore, 05/2020.
12. Ms. Sreenila Rajesh, Integrated M.Sc., Data Science (Year 3), PSG College of Technology, Coimbatore, 05/2020.
11. Mr. Tarun Kukreja, Bachelor of Technology, CSE (Year 3), MSIT (GGSIPU) New Delhi, 07/2018.
10. Mr. Chatti Bhanu Venkata Sai Phani, Bachelor of Technology, CSE (Year 3), IIIT Vadodara, 05/2018.

9. Ms. Minerva Panda, Bachelor of Technology, CSE (Year 4), IIIT Bhubaneshwar, 01/2018.
8. Mr. Ekansh Garg, Dual Degree, Civil Engg. (Year 4), IIT Madras, Chennai, 12/2017.
7. Ms. Harini V., Bachelor of Technology, CSE (Year 1), RVCE, Bangalore, 06/2017.
6. Ms. Minerva Panda, Bachelor of Technology, CSE (Year 3), IIIT Bhubaneswar, 05/2017.
5. Ms. Khushboo Bhuwalka, Bachelor of Engineering, IT (Year 3), NIT Raipur, 05/2016.
4. Mr. Sunit Adhikary, Bachelor of Engineering, CSE (Year 2), IIIT Guwahati, 05/2016.
3. Mr. Dinesh Prashanth, Bachelor of Engineering, CSE (Year 2), NIT Trichy, 05/2011.
2. Ms. Jai Brahmakshatriya, Bachelor of Engineering, IT (Year 2), NIT Suratkal, 05/2011.
1. Mr. Abhinit Modi, Bachelor of Engineering, Computer Engg. (Year 2), NIT Suratkal, 05/2011.

Other Mentoring Activities

2. UG Mentorship Program, Women's Forum, IITM, 2022-2023, India.
1. ACM MentorNet, e-mentoring graduate & undergraduate students, 2007-2011, Global.

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(f) Teaching

given as: (mm/yyyy) Course-code Course-name

[**] designed and delivered the elective course; [*] co-designed elective course, and delivered guest lectures;

[##] postgraduate core course, [#] undergraduate core course;

[+] course offered to multiple programs during a semester. e.g., M.Tech. and sponsored M.Tech.,

***(in boldface)** courses handled in entirety, while others are co-taught with another faculty member.*

Courses Taught at IIIT-B

59. (01/2025) **CSE606** Computer Graphics.
58. (01/2025) AIM843 Spatiotemporal Data Analytics - I** (Module on Spatial Data Analytics).
57. (08/2024) AIM843 Spatiotemporal Data Analytics - I** (Module on Spatial Data Analytics).
56. (08/2024) DHS301 Data Analysis and Visualization (Module on Data Visualization).
55. (08/2024) AMS103 Calculus (Module on Multivariate Calculus).
54. (08/2024) **DAS732** Data Visualization.
53. (01/2024) CS837 Healthcare Application Development.
52. (08/2023) **DT107** Application Development for a Connected Society.
51. (08/2023) **CS732** Data Visualization.
50. (08/2023) CS714 Advanced Computer Graphics.
49. (01/2023) AI724 Statistical Techniques for Spatio-Temporal Data Analysis**.
48. (01/2023) **CS762** Advanced Data Visualization.
47. (01/2023) CS606 Computer Graphics.
46. (08/2022) **DT107** Application Development for a Connected Society.
45. (08/2022) **CS732** Data Visualization.
44. (01/2022) CS606 Computer Graphics.
43. (01/2022) **CS762** Advanced Data Visualization.
42. (08/2021) **DT107** Application Development for a Connected Society.
41. (08/2021) CS714 Advanced Computer Graphics.
40. (08/2021) **CS732** Data Visualization.
39. (01/2021) CS606 Computer Graphics.
38. (08/2020) **DT107** Application Development for a Connected Society.
37. (08/2020) ESS201 Programming II (Lecture and Lab, Module on C++) [#].
36. (08/2020) **CS732/DS732** Data Visualization.
35. (01/2020) CS606 Computer Graphics [+].
34. (08/2019) **DT107** Application Development for a Connected Society.
33. (08/2019) ESS201 Programming II (Lecture and Lab (Module on C++)) [#].
32. (08/2019) **CS732/DS732** Data Visualization.

31. (08/2019) CSxxx Project Electives: Advanced Computer Graphics.
30. (01/2019) **CS832/DS832** Special Topics in Advanced Data Visualization [**].
29. (01/2019) CS606 Computer Graphics.
28. (08/2018) **DT107** Application Development for a Connected Society.
27. (08/2018) ESS201 Programming II (Lecture and Lab (Module on C++)) [#].
26. (08/2018) **CS732/DS732** Data Visualization.
25. (01/2018) Advanced Computer Graphics.
24. (08/2017) ESS201 Programming II (Lecture and Lab (Module on C++)) [#].
23. (08/2017) **CS732/DS732** Data Visualization.
22. (08/2017) Foundations of Computer Graphics [#].
21. (01/2017) Introduction to Computer Graphics [+].
20. (08/2016) CS709 Geometric Modeling [*].
19. (08/2016) CS856 Advanced Computer Graphics.
18. (08/2016) **CS713/DS713** Data Visualization.
17. (01/2016) CS606/DS606 Introduction to Computer Graphics.
16. (01/2016) GEN601 Scientific Computing [**].
15. (08/2015) **CS713/DS713** Data Visualization.
14. (01/2015) CS606/DS606 Introduction to Computer Graphics.
13. (01/2015) **GEN601** Introduction to Scientific Computing.
12. (08/2014) **CS713/DS713** Data Visualization [**].
11. (08/2014) CS856 Advanced Computer Graphics [**].
10. (08/2014) CC109-Lab Operating Systems Lab (Anchor-faculty) [#].
9. (01/2014) CS606/DS606 Introduction to Computer Graphics.
8. (01/2014) **GEN601** Introduction to Scientific Computing [**].
7. (08/2013) **CS606/DS606** Introduction to Computer Graphics.
6. (01/2012) CS110 Operating Systems [##].
5. (08/2011) **CS606/DS606** Introduction to Computer Graphics.
4. (07/2011) PS102 Probability & Statistics (Module).
3. (01/2011) CS110 Operating Systems [##].
2. (08/2010) **CS606/DS606** Introduction to Computer Graphics [**].
1. (07/2010) PS102 Probability & Statistics (Module).

Additional University Teaching Experience

12. (08/2022) PGCIL Module on Data Visualization, Instructor for IIIT-B-Upgrad Continuing Professional Education (CPE) Programme of Post Graduate Diploma for Power Grid Corporation of India Ltd.
11. (08/2022) PGDB203A Image Informatics (Module on Visualization), Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
10. (08/2021) PGDB203A Image Informatics (Module on Visualization), Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
9. (04/2021) PGCIL Module on Data Visualization, Instructor for IIIT-B-Upgrad Continuing Professional Education (CPE) Programme of Post Graduate Diploma for Power Grid Corporation of India Ltd.
8. (08/2020) PGDB203A Image Informatics (Module on Visualization), Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
7. (01/2020) PGDB105B Healthcare Informatics, Co-Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
6. (08/2019) PGDB203A Image Informatics (Module on Visualization), Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
5. (01/2019) PGDB105B Healthcare Informatics, Co-Instructor for IBAB-IIIT-B Joint Programme of Post Graduate Diploma in Big Data in Biology.
4. (07/2011) Introduction to Information Visualization (Module), Guest Instructor at the National Institute of Design, Bangalore (on invitation).
3. (10/2008) Introduction to Scientific Visualization, Training at the Texas Advanced Computing Center, University of Texas at Austin.
2. (01/2006) Discrete Mathematics & its Applications [#], Teaching Assistant at University of California, Davis.
1. (04/2005) Introduction to Computer Graphics [#], Teaching Assistant at University of California, Davis.

Industry Engagement/Outreach

6. (2023 –) Technical advisor and mentor faculty for Haveli Research and Development Pvt. Ltd., IIIT-B Innovation Center.
5. (2021 – 2022) Technical advisor for Data Collection Infotech (India) Pvt. Ltd. (DCIL).
4. (08/2018 – 10/2018) Mentor faculty for Hyperreality Technologies, IIIT-B Innovation Center.
3. (01/2016 – 05/2016) Consultant to Altair India Pvt. Ltd.
2. (04/2010 – 03/2012) Advisory Board Member for EurekaZing Inc.
1. (12/2010) Computer Graphics: Theory & Practice, Industrial training at LG India Pvt. Ltd., Bangalore.

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(g) Institutional Service

Research Administration at IIIT-B

- Convenor, IIIT-B Research Outreach Council (ROC) (2024-).
  - including ex-officio position as Vice-President of IIIT-B Institute Innovation Council (IIC).
- Research Portfolio/SIG manager for "Spatio-temporal Modeling, Simulation, Analytics, and Visualization" (2021-2022).
- Coordinator, Samvaad weekly seminar series (2019-2022).
- Core committee member for E-Health Research Center (2016-).
- Chairperson of the e-Health Committee (2014-2015).
- Founder & Head of Graphics-Visualization-Computing-Lab (2012-).

Administration Activities at IIIT-B (Academic and Others)

- Representative of the Departmental Internal Quality Assurance Cell (D-IQAC) for the Department of Data Science and Artificial Intelligence (DSAI) (2025-).
- Member of Internal Complaints Committee (ICC) (2024-).
  - including ex-officio position as Member of the Students Grievance Redressal Committee (SGRC).
- Member of Ph.D. Admission Criterion Revision Committee (2024-25).
- Member of Ph.D. Fee Revision Committee (2024).
- Member of the Curriculum Revamping Committee for M.Sc. Digital Society (2023).
- Member of the National Education Policy (NEP2020) Committee for strategy planning (2022-2023).
- Warden, Women's Hostel (2020-2022).
  - including ex-officio positions of Member of Student Disciplinary Committee and Anti-Drugs Committee.
- Member of the Selection Committee of Seed Funding for Startups in the IIIT-B Innovation Center, MeitY TIDE 2.0 G2 Centre, by Ministry of Electronics and Information Technology, Govt. of India (2020-2022).
- Convener for Senate sub-committee for Post Graduate Diploma Course on Big Data in Biology, a joint program with IBAB (2018-2022).
- Research Domain Representative (Data Science), Research Execomm Member (2017-2019).
- Faculty-in-charge/Editor of monthly IIIT-B newsletter (2014-2019).
- Coordinator for Master of Science (Research) and Ph.D. Degree Programmes (2014-2016)
  - including ex-officio positions of Chairperson of Research Programmes Admissions Committee (RPAC) and Member of Internal Quality Assurance Committee (IQAC).
- Convenor of Committee for Revision of Research Degree Programmes (2013-2014).
- Core Member of Internal Committee for Preparing for (national) NAAC Accreditation (2013-2014) *(IIIT-Bangalore was accredited with an A grade by NAAC in May 2014)*
- Member of Committee for Curriculum Design of Integrated M.Tech. Program (2011-2012).
- Serving on Ph.D. Comprehensive Examination Boards and Oral Examination Committees for several M.Tech. and Master of Science by Research theses (2011-).
- Serving on Doctoral Advisory Committee for several Ph.D. students (2014-).

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