Curriculum Vitæ

Saurabh Janardan Shigwan

1 Personal Details

First Name:	Saurabh
Father Name:	Janardan
Family Name:	Shigwan
Date of Birth:	3rd of January, 1989
Place of Birth:	Thane, Maharashtra, India
Citizenship:	Indian
Position:	Assistant Professor
Department:	Department of Computer Science and Engineering (DCSE) Shiv Nadar Institute of Eminence Deemed to be University (SNIOE-DTU), Greater Noida, Uttar Pradesh, India 201314
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2 Academic Career

2.1 Professional Experience

2021–present	**Assistant Professor**, DCSE, SNIOE-DTU, Greater Noida, Uttar Pradesh, India
2019–2020	**Pre-doctorate**, Psychiatry Neuroimaging Laboratory (PNL), Harvard Medical School (HMS), Boston, USA
2014–2020	**PhD Candidate**, DCSE, Indian Institute of Technology Bombay (IIT-Bombay), Mumbai, Maharashtra, India

2.2 Education

2014–2020	**PhD**, Medical Image Processing, IIT-Bombay, Mumbai, Maharashtra, India Title: "Hierarchical Pointset-Based Statistical Shape Modeling and Applications" Viva: 09/08/2020

	Jury: • Chairman: – Gadre V.M. , Department of Electrical Engineering (DEE), IIT-Bombay, Mumbai, Maharashtra, India • Referees: – Prof. Sylvain Bouix, PNL,HMS, Boston, MA, USA – Prof. Jayathi Sivaswamy, International Institute of Information Technology, Hydrabad (IIIT-Hydrabad), Gachibowli, Hydrabad • Internal Reviewers: – Prof. Ganesh Ramkrishanan, DCSE, IIT-Bombay, Mumbai, India • Advisor: – Prof. Suyash P. Awate, DCSE, IIT-Bombay, Mumbai, India
2012–2014	**Master of Technology, Computer Science**, Indian Statistical Institute, Kolkata, India
2007–2011	**Bachelor of Engineering, Computer Engineering**, University of Mumbai, India

3 Research Activities

3.1 PhD Supervision and Co-supervision

2024–present	**VSS Tejaswi Abburi**—SNIOE-DTU **Title**: ""Unsupervised Crossing Fiber detection in Multishell Diffusion MRI using Neural Network" **Director**: Saurabh Shigwan (50%) **Co-director**: Nitin Kumar (50%) **Publications**: [CP1] **Status**: ongoing
2024–present	**Vishal**—SNIOE-DTU **Title**: "Applications of Openset Recognition in Medical imaging" **Director**: Saurabh Shigwan (100%) **Status**: ongoing
2025–present	**Diksha Dhillon**—SNIOE-DTU **Title**: "3D reconstruction from noise prone video sequences" **Director**: Sumit Shekhar (50%) **Co-director**: Saurabh Shigwan (50%) **Status**: ongoing
2021–2024	**Abhishek Tiwari**—SNIOE-DTU **Title**: "Deep Learning Based Framework for DTI Parameters Estimation and Analysis for Sparse Diffusion MRI data" **Director**: Rajeev Kumar (50%) **Co-director**: Saurabh Shigwan (50%) **Publications**: [CP6], [J1], [J2], [CP7] **Status**: completed

3.2 Bachelor's Students Supervision

2026	Arnav Aditya (SNIOE-DTU)

	"Openset Recognition in Computer Vision"
2025	Mudit Adityaja (SNIOE-DTU) "Unsupervised Medical Image Segmentation"
2024	Bodduluri Saran, Kovvuri Sai Gopal Reddy (SNIOE-DTU) "Image Segmentation using Graph Neural Networks"
2023	Ananya Singhal (SNIOE-DTU) "DTI parameter estimation using sparse diffusion-MRI measurements"
2023	Siddharth Reddy (SNIOE-DTU) "Sparse view CT reconstruction"

3.3 Teachings

2026–present	**SNIOE-DTU** , India Advance Computer vision 22-hour lecture per semester.
2024–2025	**SNIOE-DTU** , India Introduction to deep learning 22-hour lecture per semester.
2025–present	**SNIOE-DTU**, India Data Structures and Algorithms 22-hour lectures per semester
2022–2025	**SNIOE-DTU**, India Digital Image Processing 22-hours lectures per semester
2021–2023	**SNIOE-DTU**, India Introduction to Probability and Statistics 22-hours lectures per semester

4 Grants and External Funding

4.1 Funding during Predoc at HMS (2019–2020)

2016–2018	**Brigham and Women's Hospital** (Boston, MA, USA) Amount awarded: $16,000 **Role: Pre-doctoral Fellow** PI: Prof. Yogesh Rathi Project Title: "Brain Tractography using Diffusion-MRI"

5 Publications

Journal Articles

[J1] A. Tiwari, S. J. Shigwan, R. K. Singh, et al., "Validation of deep learning techniques for quality augmentation in diffusion mri for clinical studies," *NeuroImage: Clinical*, 2023, Q1 SCI Journal; Impact Factor = 4.2. DOI: 10.1016/j.nicl.2023.103483.

[J2] A. Tiwari, R. K. Singh, and S. J. Shigwan, "SwinDTI: Swin transformer-based generalized fast estimation of diffusion tensor parameters from sparse data," *Neural Computing and Applications*, 2023. DOI: 10.1007/s00521-023-09206-4.

Preprints

[PP1] K. S. G. Reddy, B. Saran, A. M. Adityaja, S. J. Shigwan, and N. Kumar, "Unseggnet: Unsupervised image segmentation using graph neural networks," *arXiv preprint arXiv:2405.06057*, 2024. [Online]. Available: https://arxiv.org/pdf/2405.06057.

Conference Proceedings and Presentations

[CP1] V. T. Abburi, A. Singhal, S. J. Shigwan, and N. Kumar, "ARMARRecon: An ARMA convolutional filter based graph neural network for neurodegenerative dementias classification," in *23rd IEEE International Symposium on Biomedical Imaging (ISBI)*, 2026. [Online]. Available: https://arxiv.org/abs/2601.12067.

[CP2] A. Aditya, N. Kumar, and S. J. Shigwan, "UCDSC: Open set uncertainty aware deep simplex classifier for medical image datasets," in *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2026. [Online]. Available: https://arxiv.org/abs/2511.08196.

[CP3] A. M. Adityaja, S. J. Shigwan, and N. Kumar, "UnSegMedGAT: Unsupervised medical image segmentation using graph attention networks clustering," in *22nd IEEE International Symposium on Biomedical Imaging (ISBI)*, 2025. DOI: 10.1109/ISBI60581.2025.10980693.

[CP4] S. Dubey, S. K. Behera, K. Mittal, M. Ravikiran, N. Kumar, S. J. Shigwan, and R. Saluja, "Multi-feature graph convolution network for hindi OCR verification," in *1st Workshop on Benchmarks, Harmonization, Annotation, and Standardization for Human-Centric AI in Indian Languages (BHASHA 2025)*, 2025. DOI: 10.18653/v1/2025.bhasha-1.1.

[CP5] K. S. G. Reddy, B. Saran, A. M. Adityaja, S. J. Shigwan, N. Kumar, and S. Mukharjee, "UnSeGArmaNet: Unsupervised image segmentation using graph neural networks with convolutional ARMA filters," in *35th British Machine Vision Conference (BMVC)*, 2024. [Online]. Available: https://arxiv.org/abs/2410.06114.

[CP6] A. Tiwari, A. Singhal, S. J. Shigwan, and R. K. Singh, "Early diagnosis of alzheimer through swin-transformer-based deep learning framework using sparse diffusion measures," in *The 15th Asian Conference on Machine Learning (ACML 2023)*, 2024. [Online]. Available: https://proceedings.mlr.press/v222/tiwari24a.html.

[CP7] A. Tiwari, A. Singhal, S. J. Shigwan, and R. K. Singh, "Deep learning framework using sparse diffusion mri for diagnosis of frontotemporal dementia," in *IEEE/CVF International Conference on Computer Vision, BioImage Computing Workshop (ICCV 2023)*, 2023. DOI: 10.1109/ICCVW60793.2023.00413.

[CP8] S. J. Shigwan, A. Gailkwad, and S. P. Awate, "Object segmentation with deep neural nets coupled with a shape prior, when learning from a training set of limited quality and small size," in *International Symposium on Biomedical Imaging (ISBI-2020)*, Iowa City, USA, 2020. DOI: 10.1109/ISBI45749.2020.9098496.

[CP9] S. J. Shigwan and S. P. Awate, "Hierarchical generative modeling and monte-carlo EM in riemannian shape space for hypothesis testing," in *Medical Image Computing and Computer Assisted Intervention (MICCAI 2016)*, Athens, Greece, 2016. DOI: 10.1007/978-3-319-46726-9_23.

[CP10] A. Gailkwad, S. J. Shigwan, and S. P. Awate, "A statistical model for smooth shapes in kendall shape space," in *Medical Image Computing and Computer Assisted Intervention (MICCAI 2015)*, Munich, Germany, 2015. DOI: 10.1007/978-3-319-24574-4_75.