Basavaraju K.S

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Faculty ID: SIT0564

Education

	Degree	Year	Institute	Specialization
1	PhD	2024	National Institute of Technology Surathkal, Karnataka, India	**Deep Learning for Computer vision Thesis title:** Deep Learning Architectures for Urban Change Detection using Satellite images
2	M.Tech	2009	SriJayachamarajendra college of Engineering, Mysore, Karnataka, India	Bio-Medical signal processing and instrumentation
3	B.E	2007	Bangalore Institute of Technology, Bangalore, Karnataka, India	Telecommunication Engineering

Professional Experience

	Date (from-to)	Designation	Organization
1	24.08.2011 to Till date	Assistant Professor	Siddaganga Institute of Technology Tumakuru, Karnataka, India
2	24.08.2009 to 23.08.2011	Lecturer	Channabasaveshwara Institute of Technology, Gubbi Karnataka, India

Positions held

- Department Test Coordinator
- Department Website coordinator
- Department Major project coordinator
- Department Mini project coordinator
- Department Placement coordinator
- Department Industry Internship coordinator
- Department FDP coordinator

- Instrumatrix coordinator
- Halcyon Duet dance coordinator
- Halcyon Battel of Bands coordinator
- Technisium Local Hospitality coordinator

Affiliations of Professional organizations

- Professional Member of IEEE -Institute of Electrical and Electronics Engineer (M.No.-97540623) Since 2020, USA.
- Member of IEEE Geosciences and Remote Sensing Society (GRSS) (M.No.-97540623) Since 2020, USA.
- Life membership of Indian Society for Technical Education, New Delhi.

Awards and Honors

- Received the runner-up prize for Doctoral Colloquium in IEEE Geoscience and Remote Sensing Symposium (InGARSS-2023) held during 10-13 December 2023 at the International Institute of Information Technology, Bangalore, India.
- Chair, NITK IEEE Geoscience and Remote Sensing Society (GRSS) Student branch chapter, NITK, Surathkal July 2021 to July 2024.
- I worked as session chair of the DEI and WIE event in the IEEE Geoscience and Remote Sensing Symposium (InGARSS-2023) held from 10-13 December 2023 at the International Institute of Information Technology, Bangalore, India.
- Proposed and guided the project “Fingerprint based Electronic voting machine” which was sponsored by Karnataka state council for science and Technology, Indian Institute of Science, Bangalore.
- Proposed and guided the project “Brain computer interface for Drowsiness detection” which was sponsored by Karnataka state council for science and Technology, Indian Institute of Science, Bangalore.
- Proposed and guided the project “Intelligent Wheelchair” students participated in the national level competition “INGENIUM-13” and got second prize.
- Proposed and guided a project “Brain computer interface for disabled” which was sponsored by Government of Karnataka an amount of 3,00,000 rupees was sanctioned.

Courses Taught

Undergraduate Courses

- Computer Networks (CN)
- Bio-Medical Instrumentation (BMI)
- Digital Signal Processing (DSP)
- Bio-Medical Digital Signal Processing (BMDSP)
- Signals and Systems (S &S)
- Industrial Safety and Communication (IS &C)

- Analog and Digital Communication (ADC)
- Digital Image processing (DIP)
- Real Time Operating System (RTOS)
- Foundations of Machine Learning (FML)
- Mathematical Tools for Signal Processing (MTSp)
- Transform Techniques for Signals and Systems
- Mathematics for Machine Learning

Postgraduate Courses

- Real Time Operating System (RTOS)
- Data Structres (DS)

Research Areas

- Deep learning for Remote Sensing
- Deep learning for Medical Image Processing
- Deep learning for Computer vision

Publications

Journals

- Basavaraju KS, Sravya N, Shyam Lal, J Nalini, Chintala Sudhakar Reddy and Dell'Acqua Fabio, (2022) "UCDNet: A Deep Learning Model for Urban Change Detection from Bi-temporal Multispectral Sentinel-2 Satellite Images", IEEE Transactions on Geoscience and Remote Sensing, vol. 60, pp. 1-10, 2022, Art no. 5408110, IEEE publisher. DOI:: https://doi.org/10.1109/TGRS.2022.3161337
- Basavaraju KS, Solanki Hiren N, Sravya N, Shyam Lal, J Nalini, Chintala Sudhakar Reddy,(2023) "BCDetNet: A Deep Learning Architecture for Building Change Detection from Bi-Temporal High Resolution Satellite Images, International Journal of Machine Learning and Cybernetics, Springer Nature Publisher. DOI: https://doi.org/10.1007/s13042-023-01880-z
- K. S. Basavaraju, N. Sravya, V. D. Kevala, S. Suresh and S. Lal, (2024) "SFSCDNet: A Deep Learning Model With Spatial Flow-Based Semantic Change Detection From Bi-Temporal Satellite Images," in IEEE Access, vol. 12, pp. 195032-195053, 2024, doi: 10.1109/ACCESS.2024.3520428.
- Nedungatt, S., K.S., Basavaraju. & Lal, S. (2024) "MDEANet: modified detail-enhanced convolution and attention-based network for dehazing of remote sensing images." Multimed Tools Appl (2024). https://doi.org/10.1007/s11042-024-19792-7
- Basavaraju K S (2018) Bank Locker Security system using Image Processing , Journal of Instrumentation Society of India (ISOI), Vol. 48, No.1, pp 1-4, OCtober 2018.

Conference Proceedings

- C. M. Vikram, K. S. Basavaraju and C. Kishore, (2014) "DWT Based SVM Multi Classifier Approach for HR Signal Classification," 2014 Fourth International Conference on Advances in Computing and Communications, Cochin, India, 2014, pp. 69-72, doi: 10.1109/ICACC.2014.22.
- H. Lokesha, S. Veena, A. Safiya, M. Ashwin Kumar and K. S. Basavaraju, (2019)"Evaluation of Delfino (TMS320F28379D) Processor for Helmet ANC Application," 2019 Global Conference for Advancement in Technology (GCAT), Bangalore, India, 2019, pp. 1-4, doi: 10.1109/GCAT47503.2019.8978288.
- Basavaraju K S, S. N, V. D. Kevala and S. Lal,(2024) "Recent Advances in Urban Expansion Monitoring Through Deep Learning-Based Semantic Change Detection Techniques From Satellite Imagery," 2024 IEEE Space, Aerospace and Defence Conference (SPACE), Bangalore, India, 2024, pp. 169-173, doi: 10.1109/SPACE63117.2024.10668347.
- S. Telang, K. S. Basavaraju, S. N and S. Lal,(2024) "An Effective Deep Learning Model for Pan-Sharpening of Satellite Images," 2024 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT), Bangalore, India, 2024, pp. 1-6, doi: 10.1109/CONECCT62155.2024.10677226.
- N. Sravya, V. D. Kevala, P. Akshaya, K. S. Basavaraju, S. Lal and D. Gupta, "Detection of Building Infrastructure Changes From Bi-Temporal Remote Sensing Images," 2024 IEEE India Geoscience and Remote Sensing Symposium (InGARSS), Goa, India, 2024, pp. 1-4, doi: 10.1109/InGARSS61818.2024.10984321.
- H. K. Rehaman Khan and K. S. Basavaraju, "Comparative Analysis of Dynamic and Low-Power Arbitration Strategies for High-Performance Bus Systems," 2025 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), Tumakuru, India, 2025, pp. 1-6, doi: 10.1109/ICSSES64899.2025.11009368.
- J. N., K. Kamani, N. V., B. S. K. and K. S. Basavaraju., "Risk-Aware and Cost-Sensitive Machine Learning for Safe Multi-Class Water Quality Assessment," 2026 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS), Kalaburagi, India, 2026, pp. 1-8, doi: 10.1109/ICIICS67880.2026.11483454.
- N. Sravya, V. D. Kevala, P. Akshaya, K. S. Basavaraju, S. Lal and D. Gupta, "Detection of Building Infrastructure Changes From Bi-Temporal Remote Sensing Images," 2024 IEEE India Geoscience and Remote Sensing Symposium (InGARSS), Goa, India, 2024, pp. 1-4, doi: 10.1109/InGARSS61818.2024.10984321.
- R. K. H. K. and K. S. Basavaraju., "DEFuse-Net: Deforestation Detection with Late Fusion U-Net Using Multisource Satellite Imagery and Edge Deployment,"

2025 International Conference on Emerging Computation and Information Technologies (ICECIT), Tumkur, India, 2025, pp. 1-6, doi: 10.1109/ICECIT67774.2025.11451040.

- P. S., S. C., H. K. S., M. J. H. N. and K. S. Basavaraju., "TriFusionFakeGuard: A Multi-Modal Deepfake Detection Framework with Landmark, Frequency, and RGB Fusion," 2025 International Conference on Emerging Computation and Information Technologies (ICECIT), Tumkur, India, 2025, pp. 1-8, doi: 10.1109/ICECIT67774.2025.11451099.

Reviewer of Journal

- IEEE Transactions on Geosciences and Remote Sensing, IEEE Publisher.
- Earth Science Informatics, Springer Nature Publisher.
- International Journal of Data Science and Analytics, Springer Nature Publisher.

Invited Lectures, talks and workshops

- Delivered technical expert lecture on “Change Detection and its Applications” 20th May 2022 in Two Weeks Online Practical Training Program on Machine Learning and Deep Learning for Remote Sensing Applications (MLDLRSA2022) from 21-04-2022 To 25-05-2022 Conducted by Dept. of ECE, NITK Surathkal and hosted by National Remote sensing Centre-NRSC(ISRO), Hyderabad, India
- Delivered technical expert lecture on “Fully Convolutional Siamese-Concatenation Network For Change Detection” 21st May 2022 in Two Weeks Online Practical Training Program on Machine Learning and Deep Learning for Remote Sensing Applications (MLDLRSA2022) from 21-04-2022 To 25-05-2022 Conducted by Dept. of ECE, NITK Surathkal and hosted by National Remote sensing Centre-NRSC(ISRO), Hyderabad, India
- Delivered technical expert lecture on “Change Detection and its types with applications” on 18th February 2022 in Two Weeks Online Practical Training Program on Machine Learning and Deep Learning for Remote Sensing Applications (MLDLRSA2022) from 17-01-2022 To 21-02-2022 Conducted by Dept. of ECE, NITK Surathkal and hosted by National Remote sensing Centre-NRSC(ISRO), Hyderabad, India
- Delivered technical expert lecture on “CNN’s for Change detection” on 19th February 2022 in Two Weeks Online Practical Training Program on Machine Learning and Deep Learning for Remote Sensing Applications (MLDLRSA2022) from 17-01-2022 To 21-02-2022 Conducted by Dept. of ECE, NITK Surathkal and hosted by National Remote sensing Centre-NRSC(ISRO), Hyderabad, India

Certifications & Online Courses

- NPTEL Certification – Machine Learning and Its Applications (IIT Madras)
- NPTEL Certification – Deep Learning (IIT Ropar)
- NPTEL Certification – Image Processing (IIT Kharagpur)
- NPTEL Certification – Mathematical Techniques in Signal Processing (IISc)
- NPTEL Certification – Probability and Statistics (IIT Kanpur)
- Certified Facilitator – Human Resource Development (HRD),