# DR. R. BALASUBRAMANIAN

BOYSCAST FELLOW

My Erdős number: 03, Google Scholar $h$-index: 51

Professor (HAG) and Head, Department of Computer Science and Engineering,
Joint Faculty, Mehta Family School of Data Science and Artificial Intelligence, IIT Roorkee, Roorkee 247 667, India, Tel: +91 1332 285852, email: bala@cs.iitr.ac.in, balaiitr@ieee.org

## EDUCATION

**Indian Institute of Technology Madras, Chennai, India** *July 2001*
Ph.D (Mathematics and Computer Science
under Prof. K. Swaminathan and Prof. Sukhendu Das)

**Madras Christian College, University of Madras** *July 1996*
M. Sc (Mathematics)
**89.81% (Gold Medalist)**

**A.M. Jain College, University of Madras** *July 1994*
B. Sc (Mathematics)
**91.8%**

## WORK EXPERIENCE

- **Professor HAG** (Higher Administrative Grade), Department of Computer Science and Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Jan'25 - Ongoing)
- **Joint Faculty**, Mehta Family School of Data Science and Artificial Intelligence, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Jun'21 - Ongoing)
- **Professor**, Department of Computer Science and Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Dec'18 - Ongoing)
- **Visiting Researcher** with Dr. Subrahmanyam Murala, School of Computer Science and Statistics, Trinity College Dublin, IRELAND (Jun'25 and Sep'25)
- **Visiting Researcher** with Prof. Byung-Gyu Kim, Intelligent Vision Processing Lab (IVPL), Department of Artificial Intelligence Engineering, Sookmyung Women's University, Seoul, SOUTH KOREA (Jun'25 and Jul'25)
- **Chair Professor**, under the fellowship from iHUB Divyasampark, Technology Innovation Hub (A Joint initiative of DST, Govt. of India and IIT Roorkee), Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (May'22 - May'25)
- **Visiting Professor** with Dr. Ritu Gupta, School of Electrical Engineering, Computing and Mathematical Sciences, Curtin University, Perth, AUSTRALIA (Dec'23 and Jan' 25)
- **Visiting Researcher** with Dr. Mukesh Prasad, School of Computer Science, Australian Artificial Intelligence Institute, Faculty of Engineering and Information Technology, University of Technology Sydney, AUSTRALIA (Jan'25)
- **Visiting Researcher** with Dr. Priyanka Singh, Department of Cyber Security, School of Electrical Engineering and Computer Science, The University of Queensland, Brisbane, AUSTRALIA (Jun'24 and Jul'24)

- **Guest Professor/Visiting Researcher** at Institute for Document Analysis Knowledge Science (IDAKS), Osaka Metropolitan University (Formerly Osaka Prefecture University), Osaka, JAPAN (Feb'20 - Mar'24)
- **Visiting Researcher** with Prof. Mohan S. Kankanhalli, Department of Computer Science, School of Computing, SeSaMe Research Centre and N-CRiPT, National University of Singapore, SINGAPORE (Jul'13, Jul'14 and Dec'23)
- **Visiting Research Professor** in The Centre for Research and Graduate Studies, University of Cyberjaya, MALAYSIA (Jan'20 - Jan'21)
- **Visiting Researcher** with Dr. Masakazu Iwamura, Dept. of Computer Science and Intelligent Systems, Graduate School of Engineering, Osaka Prefecture University, Osaka, JAPAN (Jun'18, Jun' 19 and Dec'19)
- **Visiting Researcher** with Dr. Ganesh Pandian Namasivayam, iCeMS, Kyoto University, Kyoto, JAPAN (Jun' 19 and Dec'19)
- **Visiting Researcher** with Prof. Vincenzo Piuri, Dipartimento di Informatica, Universita' degli Studi di Milano, Milan, ITALY (Jul'19)
- **Visiting Researcher** with Prof. Kidiyo KPALMA, Image Department, Institut d'Électronique et de Télécommunications de Rennes, Institut National des Sciences Appliquées de Rennes (INSA), Rennes, FRANCE (Jun'19 and Jul'19)
- **Visiting Researcher** with Prof. V. Vetrivel, Department of Mathematics, Indian Institute of Technology Madras, Chennai 600 036, INDIA (Dec'17, Dec'18 and Apr'19)
- **Associate Professor**, Department of Computer Science and Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Sep'13 - Dec'18)
- **Visiting Researcher** with Prof. Umapada Pal, Computer Vision and Pattern Recognition Unit, Indian Statistical Institute, Kolkata, INDIA (Jun'18)
- **Visiting Researcher** with Dr. Andrea Kutics, Department of Natural Sciences, International Christian University, Tokyo, JAPAN (Jun'18)
- **Visiting Researcher** with Dr. Pradeep Atrey, Department of Computer Science, University at Albany - State University of New York (SUNY), NY, USA (Dec'14)
- **Visiting Researcher** with Prof. C. Eswaran, Faculty of Computing and Informatics, Multimedia University, Cyberjaya Campus, MALAYSIA (Jun'12 and Jul'14)
- **Associate Professor**, Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Oct'12 - Sep'13)
- **Visiting Researcher** with Dr. Ibrahim Venkat, School of Computer Sciences, Universiti Sains Malaysia, Pulau Pinang, MALAYSIA (Jun'12 and Jul'13)
- **Assistant Professor**, Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Feb' 06 - Oct'12)
- **Visiting Scientist** with Dr. K. Swaminathan, Department of Mathematics, Indian Institute of Technology Madras, Chennai 600 036, INDIA (Oct' 11 and Dec'11)
- **Visiting Professor** (under BOYSCAST fellowship) with Dr. Jonathan Wu, Department of Electrical and Computer Engineering, University of Windsor, Windsor, Ontario, ON, N9B 3P4 CANADA (May' 09 - Aug' 09)
- **Assistant Professor** (On Contract), Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Jan'06 - Feb' 06)

- **Lecturer** (On Contract), Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247 667, INDIA (Sep' 04 - Dec'05)
- **Lecturer**, Department of Computer Science and Information Systems, IPCU Group, Birla Institute of Technology and Science, Pilani, Rajasthan 333 031, INDIA (Sep' 03 - Sep' 04)
- **Post Doctoral Associate** with Prof. Deborah Silver, Department of Electrical and Computer Engineering, Rutgers, The State University of New Jersey, USA (July'02 - Apr'03)
- **Post Doctoral Fellow** with Prof. Pascal Matsakis, Computer Engineering and Computer Science Department, University of Missouri, Columbia, USA (Oct'01 - June' 02)
- **Guest Scientist**, International Center for Theoretical Physics (ICTP) Trieste, ITALY (Sep' 01, Sep' 00)

## THESIS SUPERVISED

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|---|---|
| **Ph.D** | 35 completed and 15 ongoing |
| **M.Tech** | 61 completed and 04 ongoing |
| **B.Tech** | 43 completed and 03 ongoing |

## COMPLETED PH.D STUDENTS

1. **Dr. Sanjeev Kumar (Jul 2004 - Mar 2008)**: *Reconstruction of 3D Objects from 2D views: Simulation, Applications and Error Analysis* (with Prof. N. Sukavanam, Awarded Ph.D in Nov. 2008 and **presently working as a Professor in the Department of Mathematics at IIT Roorkee.** He was a Post Doctoral Fellow in the Department of Mathematics and Computer Science, The Artificial Vision and Real-Time Systems (AVIRES) Laboratory, University of Udine, **ITALY** from Mar. 2008 to Nov. 2010).
2. **Dr. Gaurav Bhatnagar (Jul 2006 - Sep 2009)**: *Emphasized Digital Watermarking on Singular Value Decomposition in Frequency Domain* (Awarded Ph.D in Nov. 2010 and **presently working as a Professor in the Department of Mathematics and Statistics at IIT Jodhpur**. He was a Post Doctoral Fellow in the Dept. of Electrical and Computer Engineering, University of Windsor, **CANADA** from October 2009 to August 2013).
3. **Dr. Nidhi Taneja (Jan 2007 - May 2010)**: *Security Solutions for Still Visual Data* (with Dr. Indra Gupta, Awarded Ph.D in Nov. 2010 and presently working as a Professor and Head in the Dept. of Electronics and Communication Engineering at Indira Gandhi Delhi Technical University for Women).
4. **Dr. Manoj Kumar (Jul 2006 - Dec 2010)**: *Reconstruction of 3-D Objects using Shape From Shading Algorithms* (with Prof. Rama Bhargava, Awarded Ph.D in Nov. 2011 and Presently working as an Assistant Professor in the Department of Computer Science, Babasaheb Bhimrao Ambedkar Central University, Lucknow).
5. **Dr. Sanjay Rawat (Jan 2008 - June 2011)**: *Digital Watermarking for Copyright Protection and Authentication* (Awarded Ph.D in Nov. 2012 and presently working as an Assistant Professor in the Department of Mathematics, THDC Institute of Hydropower Engineering and Technology, Bhagirathipuram, Tehri Garhwal).
6. **Dr. Anil Balaji Gonde (Jul 2007-Aug 2011)**: *Local and Global Descriptors using Wavelet based features for Image Retrieval* (with Prof. R. P. Maheshwari, Awarded Ph.D in Nov. 2012 and presently working as a Professor in the Department of Electronics and Tele communication Engineering, Shri Guru Gobind Singhji Institute of Engineering and Technology, Nanded).

7. **Dr. Subrahmanyam Murala (Aug 2009-Apr 2012)**: *Design and Integration of Feature Descriptors for Content Based Image Retrieval* (with Prof. R. P. Maheshwari, Defended his thesis on 05/11/2012 and **presently working as an Associate Professor in the School of Computer Science and Statistics, Trinity College Dublin, Ireland**. He was in **IIT Ropar** as an Associate Professor and the Dept. of Electrical and Computer Engineering, University of Windsor, **CANADA** as a Post Doctoral Fellow from July 2012 to June 2014).

8. **Dr. Sanoj Kumar (Jul 2008 - Dec 2012)**: *Robust Estimation of Optical Flow and Disparity map from Image Sequences* (with Prof. N. Sukavanam, Defended his thesis on 23/05/2013 and he was in the Department of Computer Science, The Artificial Vision and Real-Time Systems (AVIRES) Laboratory, University of Udine, **ITALY** as a Post Doctoral Fellow from October 2013 to September 2014).

9. **Dr. Mohit Srivastava (Jan 2009 - July 2013)**: *Quantitative Approaches for Object Based Image Analysis of Satellite Data* (with Prof. Manoj Arora, Defended his thesis on 27/12/2013).

10. **Dr. Himanshu Agarwal (July 2009 - July 2014)**: *Multipurpose Invisible and Visible Digital Image Watermarking Schemes* (Defended his thesis on 23/02/2015 and he was an Exchange Ph.D student under Dr. Pradeep Atrey in the Applied Computer Science Department, The University of Winnipeg, MB, **CANADA** under the Canadian Commonwealth Scholarship Program, for Six months from September 1, 2012 to February 28, 2013).

11. **Dr. Prabhu Natarajan (Jul 2010- Oct 2014)**: *Study of Some Information Extraction Techniques for Hyperspectral Imaging* (with Prof. Manoj Arora, Defended his thesis on 06/04/2015).

12. **Dr. Manisha Verma (Jul 2012- Dec 2015)**: *New Feature Descriptors for Image Retrieval, Object Tracking and Shot Detection* (Defended her thesis on 06/04/2016, **presently in the Department of Mathematics, IIT (ISM) Dhanbad as an Assistant Professor**. She worked as a Post Doctoral Fellow in the Department of Electrical Engineering at IIT Gandhinagar from August 1, 2016 to Oct 14, 2017. Also she was a Post Doctoral fellow at Institute of Datability Science, Osaka University, **JAPAN** from August 2018 to April 2022).

13. **Dr. Tasneem Ahmed (Jan 2012 - Jan 2016)**: *Development of Land Surface Monitoring Algorithms for Satellite Images* (with Prof. Dharmendra Singh, Defended his thesis on 11/05/2016).

14. **Dr. Pushpendra Kumar (Jul 2011 - Jul 2016)**: *Some Efficient Algorithms for Optical Flow Estimation* (with Dr. Sanjeev Kumar, Defended his thesis on 27/01/2017 and **presently in the Department of Mathematics, NIT Bhopal as an Assistant Professor**).

15. **Dr. Bhavik R Patel (Jul 2013 - Dec 2016)**: *Face Image Analysis for Soft Biometric Classification* (with Prof. R. P. Maheshwari, Defended his thesis on 01/05/2017 and presently in **MathWorks** as Senior Technical Writer from July 2020).

16. **Dr. Arun Singh Pundir (Dec 2014 - Mar 2018)**: *Multi-Color-Model Video Analysis for Fire and Smoke Detection* (Defended his thesis on 17/08/2018).

17. **Dr. Rahul Nijhawan (Dec 2014 - May 2018)**: *Machine Learning Models for Snow, Glacier Terrain and Hazard Mapping* (with Prof. Josodhir Das, Defended his thesis on 11/09/2018 and he received **Best PhD thesis award** in MIND 2019 held at NIT Kurukshetra, INDIA).

18. **Dr. Anjali Gautam (Jul 2015 - Jan 2019)**: *Brain Lesion Delineation and Classification* (Defended her thesis on 24/06/2019 and **presently in the Department of Information Technology, IIIT Allahabad as an Assistant Professor from January 2021**).

19. **Dr. Amitesh Singh Rajput (Dec 2015 - Aug 2019)**: *Privacy-Preserving Approach for Cloud Based Multimedia Computing* (Defended his thesis on 21/01/2020).

20. **Dr. Javed Imran (Jul 2016 - Jul 2020)**: *Human Activity Recognition using Deep Learning Techniques* (Defended his thesis on 21/10/2020).

21. **Dr. Vivekraj V.K (Dec 2014 - Oct 2020)**: *Autonomous Video Skimming: Taxonomy, Frameworks and Quantitative Evaluation* (with Dr. Debashis Sen, IIT Kharagpur, Defended his thesis on 12/02/2021 and **presently in the Department of Computer Science and Engineering, IIIT Dharwad as an Assistant Professor from January 2022**).

22. **Dr. Ankur Gupta (Jul 2015 - Dec 2020)**: *Design Automation of Decision Support Systems for Cardiocvascular Disease Prediction* (Defended his thesis on 29/04/2021).

23. **Dr. Vishesh Kumar Tanwar (Dec 2015 - Dec 2020)**: *Privacy-Preserving Algorithms For Multimedia Processing Over Cloud* (with Prof. Rama Bhargava, Defended his thesis on 17/07/2021 and he was a Post Doctoral fellow at Center for Research in Computer Vision, University of Central Florida, **USA** under **Prof. Mubarak Shah** and presently working as a Post Doctoral Fellow at CReWMaN Research Lab, Missouri University of Science and Technology, Rolla, USA).

24. **Dr. Himanshu Buckchash (Dec 2015 - Jul 2021)**: *Unsupervised Human Activity Recognition and Generation* (Defended his thesis on 28/10/2021, he was a Post Doctoral Fellow at UiT Tromso, **NORWAY** under Prof. Dilip Prasad in BioAI lab and presently he is a Senior Lecturer at **University of Applied Sciences Krems, AUSTRIA**).

25. **Late Dr. Rahul Kumar (Mar 2017 - Sep 2021)**: *Delineation and Classification of Brain Tumor using MRI Sequences* (Defended his thesis on 08/11/2021 and **workd in the Department of Computer Science and Engineering at Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Jais, Amethi as an Assistant Professor from May 2022 to July 2023**).

26. **Dr. Rahul Kumar (Dec 2016 - Sep 2021)**: *Design and Analysis of Image and Video Dehazing VLSI Architectures* (with Prof. Brajesh Kumar Kaushik, Defended his thesis on 04/01/2022).

27. **Dr. Gyanendra (Dec 2016 - Sep 2021)**: *VLSI Architecture for Efficient Computation of Fast Fourier and Wavelet Transforms* (with Prof. Brajesh Kumar Kaushik, Defended his thesis on 05/01/2022 and presently working as an Application Engineer at **Qualcomm, Hyderabad**).

28. **Dr. Ridhi Arora (Mar 2017 - Dec 2021)**: *Computer-Aided Diagnosis of Breast Lesion and Skin Lesion using Delineation and Classification Approaches* (Defended her thesis on 14/03/2022 and presently she is a Post-Doctoral Associate at University of Pittsburgh, PA, **USA** from August 2022).

29. **Dr. Puneet Kumar (July 2018 - August 2022)**: *Multimodal Emotion Analysis Using Deep Learning Techniques* (Defended his thesis on 21/10/2022 and is working as a Post-Doctoral Researcher at the 'Multimodal Perception for Affective Computing' group at the Center for Machine Vision and Signal Analysis (CMVS), **Oulu University, FINLAND** from January 2023. Additionally, he has been an Affiliated Scientist with the Meditation Research Program, **Harvard University and Massachusetts Hospital, USA** from April 2024. He also received **Best Ph.D. Thesis Award** in UPCON 2022).

30. **Dr. Gaurav Bharadwaj (July 2017 - December 2022)**: *Biped Robot Trajectory Planning, Simulation and Control* (Defended his thesis on 22/02/2023).

31. **Dr. N. Kishore Babu (December 2018 - March 2024)**: *Deep Learning-Driven Approaches to Medical Image Computing and Secure Processing* (Defended his thesis on 24/06/2024 and **presently in the Department of Computer Science and Engineering, IIIT Ranchi as an Assistant Professor** from August 2024).

32. **Dr. Anshul Pundhir (December 2019 - July 2024)**: *Utility Enhancement and Bias Mitigation in Skin Lesion Analysis using Deep Learning* (Defended his thesis on 03/10/2024 and is working as a Postdoctoral Associate in the Department of Biomedical Engineering, **University of Virginia, USA** from March 2025).
33. **Dr. Nitin Tyagi (December 2019 - February 2025)**: *Development of Deep Learning Frameworks for Seed Categorization via NIR-Hyperspectral Imaging* (with Dr. Neerja Garg, CSIO-CSIR, Chandigarh, Defended his thesis on 13/05/2025).
34. **Dr. Deepak Kumar (December 2021 - May 2025)**: *From Signals to Visuals: Multimodal Affect and Behavior Analysis* (Defended his thesis on 16/07/2025).
35. **Dr. Anushka Joshi (July 2022 - July 2025)**: *Short Term and Long Term Prediction of Earthquake Parameters using Deep Learning Networks* (Submitted her thesis on 16/08/2025).

## POST DOCTORAL RESEARCH ASSOCIATES

**Dr. Asha Rani** (30th June 2011 - 31st March 2014): Under **CSIR Project** entitled "Digital Watermarking for Rightful Ownership and Copyright Protection".

**Dr. Asha Rani** (October 2014- October 2017) under **DST WOS-A Project** entitled "Multimodal Biometric based person Authentication and Identification System".

**Dr. Priyanka Singh** (Jan 2016- Jan 2017) under **DeitY Project** in "Multimedia Security" and worked as a Post Doctoral Fellow in the Department of Computer Science at Dartmouth College, New Hampshire, USA with **Prof. Hany Farid**.

**Dr. Debanjan Sadhya** (July 2017 - Feb 2019) under **Institute Post Doctoral Fellow** in "Privacy Preserving Data Deduplication in Cloud".

**Dr. Nidhi Saxena** (Feb 2019 - Aug 2020) under **Institute Post Doctoral Fellow** in "Privacy Preservation while Removing Data Redundancies".

**Dr. Pradeep Singh** (Oct 2022 - Mar 2024) under **The National Board for Higher Mathematics (NBHM) Post Doctoral Fellow** in "Geometric Deep Learning".

**Dr. Shubham Saini** (Mar 2023 - June 2023) under the **Consultancy Project** in "AI-Driven Trading Platform".

**Dr. Saravanan. M** (Sep 2023 - Oct 2023) under the **Young Scientist Fellowship, Tamilnadu State Council for Science and Technology** in "The Applications of AI and ML".

**Dr. Saravanan. M** (Jan 2024 - Jan 2027) under the **SERB TARE Fellowship, New Delhi** in "Design of a Localized Network Model for Image Denoising and Prediction Using Learning Approaches".

**Dr. Pradeep Singh** (Apr 2024 - Till date) under **SERB National Post Doctoral Fellow (NPDF)** in "Towards Elastic Equivariance: Equivariant Learning in Elastically Transformed Spaces".

## PROJECT FELLOWS

1. **Dr. Asha Rani** (ISRO Project, June 2007 to December 2007)
2. **Dr. Gaurav Gupta** (ISRO Project, October 2007 to August 2010)
3. **Dr. Deepak Murugan** (ISRO Project, April 2013 to February 2015)
4. **Mr. Ankit Sharma** (Samsung Project, January 2019 to July 2019)
5. **Mr. Amit Kumar Singh** (ISRO Project, April 2023 to October 2023)
6. **Ms. Pooja Dhayal** (ISRO Project, February 2024 to August 2024)

## MAJOR AWARDS

- ***BOYSCAST Fellowship (2008-09)*** (Fellowship of US $3000 per month + perks) in Mathematical Sciences awarded by Department of Science and Technology (DST), Government of India to visit **University of Windsor, CANADA** for the duration of THREE months for conducting advanced training/research in the area of Computational aspects of Geometry and Algebra under the mentorship of **Prof. Jonathan Wu**, Canada Research Chair, Department of Electrical and Computer Engineering, University of Windsor, CANADA.
- ***Outstanding Teacher Award*** with citation, awarded by Indian Institute of Technology Roorkee, 2010 **(On Teachers' Day)**.
- ***Outstanding Teacher Award*** with citation and Rs.1,00,000/- awarded by Indian Institute of Technology Roorkee, 2020 **(On Teachers' Day)**.
- ***Chair Professor (2022-25)***, Fellowship of Rs.25000/- per month from iHUB Divyasampark, Technology Innovation Hub (A Joint initiative of DST, Govt. of India and IIT Roorkee), Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, INDIA.
- ***Ramkumar Prize for outstanding Teaching and Research 2022*** with citation and Rs.1,00,000/- awarded by Indian Institute of Technology Roorkee, 2022 **(On Teachers' Day)**.
- ***ICPC Coach Award*** (five or more years bringing teams to the World Finals), 45th International Collegiate Programming Contest (ICPC), 06-11, November, 2022, Dhaka, BANGLADESH.

## INDUSTRY INTERACTION

- Microsoft R & D, Bangalore
- Sarnoff Innovative Tech. Ltd., Bangalore
- JFWTC, GE India, Bangalore
- IBM India
- iLink Systems, Seattle, USA
- Samsung, Noida, India
- Intel, Bangalore, India
- Facebook Inc.,USA
- Facebook AI Research and Applied Machine Learning, USA
- Honeywell, Bangalore, India
- Great Learning, India
- Imarticus Learning, India
- Intellipaat, India
- Simplilearn, India

## SPONSORED RESEARCH PROJECTS

| S. No | Title of the Project | Sponsoring Agency | Grant Sanctioned (in Rs.) | Investigator | Status |
|---|---|---|---|---|---|
| 1 | Nearest neighbor vector based Palmprint verification | IIT Roorkee, Scheme A | 1.0 lac | Principal Investigator | Completed (2006-07) |
| 2 | Reconstruction of 3D curves and surfaces from arbitrary Perspective views | MHRD, IIT Roorkee, Scheme B | 3.14 lacs | Principal Investigator | Completed (2007-10) |
| 3 | Face Recognition: A Neural Network Approach | DST, New Delhi | 2.88 lacs | Principal Investigator | Completed (2007-10) |
| 4 | Reconstruction of 3D objects from Stereo space Imagery for Development of city models | ISRO, SAC Ahmedabad | 11.5 lacs | Co-PI, PI: Prof. Rama Bhargava | Completed (Apr 2007 to August 2010) |
| 5 | Digital Watermarking for Rightful Ownership & Copyright Protection | CSIR, New Delhi | 10.92 lacs | Principal Investigator | Completed (2011-14) |
| 6 | 3D Reconstruction and Software Development for City Model Generation from Satellite Images | ISRO, SAC Ahmedabad | 7.73 lacs | Principal Investigator | Completed (2012-15) |
| 7 | Multimodal Biometric based person Authentication and Identification System | DST, New Delhi | 23.52667 lacs | Mentor, PI: Dr. Asha Rani (under WOS-A) | Completed (2014-17) |
| 8 | Information Security Education and Awareness (ISEA) Project phase II | DeitY, New Delhi | 88.66431 lacs | Co-PI, PI: Prof. Manoj Misra (Former Head, CSE) | Completed (2014-24) |
| 9 | Development and Real-time Implementation of Filters to Remove Noise and Blur Effect | Instruments Research & Development Establishment (IRDE), Dehradun | 18.50 lacs | Co-PI, PI: Dr. B. K. Kaushik | Completed (2016-18) |
| 10 | Multi-oriented Indic text recognition in natural scene and video images | Science & Engineering Research Board, New Delhi | 17.8871 lacs | Co-PI, PI: Dr. Partha Pratim Roy | Completed (2016-20) |

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| 11 | NVIDIA Hardware Grant, Titan X {non-Pascal} GPU | NVIDIA Corporation | 1.5 lacs | Principal Investigator | Completed (2016-17) |
| 12 | Thermal Imager with Calibrator for Bad Weather and Night Vision | SMILE, IIT Roorkee | 43 lacs | Co-PI, PI: Dr. B. K. Kaushik | Completed (2017-18) |
| 13 | End-to-End Emotional Speech Synthesis - Phase 1 | Samsung | 24.204 lacs (including Instruments) | Principal Investigator | Completed (2018-19) |
| 14 | Brain Computer Interface for Neuro and Cognitive Research | SMILE, IIT Roorkee | 75 lacs | Co-PI, PI: Dr. Partha Pratim Roy | Completed (2018-19) |
| 15 | Urban and Regional Inequality Modelling as Story-Telling: Using Simulation Models as Narrative | SPARC, A Government of India Initiative | 94.46 lacs | Co-PI, PI: Dr. Arindam Biswas and Prof. Tetsuo Kidokoro (Japan) | Completed (2019-21) |
| 16 | End-to-End Emotional Speech Synthesis - Phase 2 | Samsung | 10.62 lacs | Principal Investigator | Completed (2019-20) |
| 17 | Automated Cognitive Metrics Classification Framework to Improve Human Machine Collaboration | DRDO, Delhi | 48.83 lacs | Co-PI, PI: Dr. Partha Pratim Roy | Completed (2020-23) |
| 18 | Hardware implementation of Artificial Intelligence based Object and Motion Detection | Instruments Research & Development Establishment (IRDE), Dehradun | 9.65 lacs | Principal Investigator | Completed (2021-24) |
| 19 | Development of Al powered Multipurpose Intelligent Security and Surveillance System | DST-TIH | 100 lacs | Co-PI, PI: Dr. B. K. Kaushik | Completed (2021-24) |
| 20 | Landslide monitoring, forecasting and mitigation system | ISRO, SAC Ahmedabad | 14.1096 lacs | Principal Investigator | Ongoing (2022-25) |

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| 21 | Geometric Deep Learning | National Board of Higher Mathematics, Department of Atomic Energy | 10.24 lacs | Mentor, PI: Dr. Pradeep Singh | Completed (2022-24) |
| 22 | Varietal Classification of Seeds using Deep Learning and NIR Hyperspectral Imaging Technique | SERB MATRICS, New Delhi | 6.6 lacs | Principal Investigator | Ongoing (2023-26) |
| 23 | Design of a Localized Network Model for Image Denoising and Prediction Using Learning Approaches | SERB TARE, New Delhi | 18.3 lacs | Mentor, PI: Dr. M. Saravanan | Ongoing (2024-27) |
| 24 | Towards Elastic Equivariance: Equivariant Learning in Elastically Transformed Spaces | SERB NPDF, New Delhi | 27.12 lacs | Mentor, PI: Dr. Pradeep Singh | Ongoing (2024-26) |
| 25 | Information Security Education and Awareness (ISEA) Project phase III | MeitY, New Delhi | 467 lacs | Co-PI, PI: Prof. Sugata Gangopadhyay (Former Head, CSE) | Ongoing (2024-28) |
| 26 | TCS Research Fellowship | TCS Bengaluru | 60.2 lacs | Principal Investigator | Ongoing (2024-29) |

**CONSULTANCY PROJECTS**

| S. No | Title of the Project | Sponsoring Agency | Grant Sanctioned (in Rs.) | Investigator | Status |
|---|---|---|---|---|---|
| 1 | Development of feature reduction and classification algorithms for Hyperspectral data processing | Defence Electronics Applications Laboratory (DEAL), Dehradun | 9.3755 lacs | Principal Investigator | Completed (Nov 2010 to Mar 2012) |
| 2 | Anomaly Detection and Sub-pixel Classification Algorithms for Hyperspectral Imaging | Defence Electronics Applications Laboratory (DEAL), Dehradun | 19.854 lacs | Investigator, PI: Prof. Manoj Arora | Completed (Nov 2010 to Mar 2012) |
| 3 | Study of Heat Shimmer Removal Techniques for Long Range Imaging Systems | Instruments Research & Development Establishment (IRDE), Dehradun | 8.98 lacs | Co-PI, PI: Dr. B. K. Kaushik | Completed (2013-15) |
| 4 | Investigating and Analyzing the Program and Course Structure with respect to its Conformance with the International Standards and Research & Industry needs | Govt. of Yemen | US $8423.00 | Investigator, PI: Dr. Sandeep Kumar Garg | Completed (2014-15) |
| 5 | Development of Restoration Techniques for Weather Degraded Images | Instruments Research & Development Establishment (IRDE), Dehradun | 9.70 lacs | Co-PI, PI: Dr. B. K. Kaushik | Completed (2015-17) |
| 6 | AI-Driven Trading Platform | SmartAlpha Pvt. Limited, Hyderabad | 27 lacs | Principal Investigator | Completed (2022-24) |
| 7 | Object Detection by Fusion of Terahertz and Infrared Imaging | Instruments Research & Development Establishment (IRDE), Dehradun | 8.75 lacs | Principal Investigator | Ongoing (2023-25) |

## TEACHING

- So far I have taught **Fundamentals of Object Oriented Programming (CSN 103), Programming with C and C++ (CSC 101), Data Structures (CS 102/ CSC-102/ MA 106/ MA 568/CA 506/MA 302), Discrete Mathematics (DAC 201), Mathematical Aspects of Computer Graphics (IMA 17/ MA 634), Unix Network Programming (CA 602), Image Processing (CA/MA 625), Data Base Management System (MA 635/ MA 303/CSN 351), Data Structures and Algorithms (AID 525), Computer Vision (AID 565), Artificial Intelligence (CA 701), Computer Aided Design (CA 633/CA 717/ MA 632), Computer Systems and Programming (EC 101 A), Object Oriented Programming Languages (CA 503), Graph Theory (MA 631), Object Oriented Analysis and Design (CS-291), Discrete Structures (CSN-106), Machine Learning (CSN 382), Operating Systems (CSN-232), Advanced Algorithms (CSN-501), Computer Graphics (CSN-372), Computer Applications (MA 550), Computer Programming & Numerical Analysis (MA 739) and Basic Engineering Mathematics (MA 101, MA 102 and MA 201)** courses for UG and PG students (B.Tech, M.Sc and M. Tech) in the Dept. of Computer Science and Engineering and Dept. of Mathematics, IIT Roorkee, INDIA.

## NPTEL MOOC ONLINE COURSE

- Fundamentals of Object Oriented Programming (12 weeks) (Jan - April 2025), Learners enrolled: 19374, Exam registration: 6841

## COURSE DEVELOPMENT

- Computer Vision, Image Processing, Computer Graphics, Data Structures, Design Analysis of Algorithms, and DBMS (for FIVE year M.Sc Integrated Programme).
- Data Structures, Image Processing, Computer Graphics, Computer Aided Design, Theory of Computation, Object Oriented Programming Languages and DBMS (for M.C.A.).
- Elective Courses for B. Tech Computer Science and Engineering: Computer Vision, Image Processing, Probability and Statistics for Engineers, Computational Geometry, Advanced Graph Theory and Multimedia Technologies.
- **Chairman, Syllabus Revision Committee** for U.G., B.Tech Computer Science and Engineering curriculum, 2023-24.

## EXPERTISE

- **Computer Vision** Vision Geometry, Shape from Shading and Optical Flow Problems
- **Graphics** Visualization and Volume Graphics
- **Image Processing** Fractional Transform Theory, Wavelet Analysis, Multimedia Security: Encrypted Domain Processing of Big Multimedia Data over Cloud, Biometrics, Content Based Video Retrieval, Video Skimming and Summarization, Medical Imaging, Long-Range Imaging, Hyperspectral Imaging, Machine Learning, Pattern Recognition, Multilingual Text Recognition, EEG based Pattern Analysis.

## PUBLICATIONS SUMMARY

| Category | Published/ Accepted | Under Review/ Revision |
|---|---|---|
| Refereed Journal Papers | 171 | 10 |
| Refereed Conference Papers | 89 | 06 |
| Books Authored | 04 | 00 |
| Books Edited | 12 | 00 |
| Patents Granted | 01 | 00 |
| Total | 277 | 16 |

## LIST OF REPRESENTATIVE PUBLICATIONS

### A. Refereed International Journal Papers: Q1 (JCR 2024, published in June 2025)

1. Rajkumar, Swalpa Kumar Roy, Gemine Vivone, Swagatam Das, **Balasubramanian Raman** and Pravendra Singh, From Classical Image Fusion to Deep Representation Learning: A Survey of the Advances in Hyperspectral Image Pan-sharpening, Accepted for publication in *Information Fusion* (*Elsevier)*, 2025.

2. Pradeep Singh, Shreyas R. Dahale, Yash Tanwar, Shruti Gupta and **Balasubramanian Raman**, Brain-Lateralized Reservoirs: Neuro-Anatomically Constrained Echo State Networks for Chaotic and Physiological Signals, Accepted for publication in *Knowledge-Based Systems* (*Elsevier)*, 2025.

3. Pooja Dhayal, Pradeep Singh, Kanishk Sharma, Samarpita Sarkar, Dhani Ram Rajak, Alok Bhardwaj and **Balasubramanian Raman**, A Lightweight Dual-Stream Attention Network for Real-Time Landslide Monitoring in Multi-Modal Remote Sensing Imagery, *Remote Sensing Applications: Society and Environment* (*Elsevier)*, **40**, pp. 101732, 2025.

4. Pradeep Singh, Hrishit B. P. and **Balasubramanian Raman**, Geometry-Aware Reservoirs: Patch-Wise Jacobian Lifting with Cross-Patch Couplings for Piecewise-Linear Modeling of Chaotic Flows, *Chaos, Solitons and Fractals* (*Elsevier)*, **200(3)**, pp. 117160, 2025.

5. Pradeep Singh and **Balasubramanian Raman**, Turning Time into Shapes: A Point-Cloud Framework with Chaotic Signatures for Time Series, Accepted for publication in *Journal of Forecasting* (*Wiley)*, 2025.

6. Puneet Kumar, Sarthak Malik, **Balasubramanian Raman** and Xiaobai Li, VISTANet: VIsual Spoken Textual Additive Net for Interpretable Multimodal Emotion Recognition, ***IEEE Transactions on Affective Computing***, 2025.

7. Anushka Joshi, Nithya Reddy Vedium and **Balasubramanian Raman**, DFTQuake: Tripartite Fourier Attention and Dendrite Network for Real-Time Early Prediction of Earthquake Magnitude and Peak Ground Acceleration, Accepted for publication in *Engineering Applications of Artificial Intelligence* (*Elsevier*), 2025.

8. Anushka Joshi, Pradeep Singh and **Balasubramanian Raman**, IsoMapGen: Framework for Early Prediction of Peak Ground Acceleration Using Tripartite Feature Extraction and Gated Attention Model, *Computers and Geosciences* (*Elsevier*), **Vol. 196**, pp. 1-15, 105849, 2025.

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11. Anushka Joshi, **Balasubramanian Raman**, C. Krishna Mohan and Linga Reddy Cenkeramaddi, A New Machine Learning Approach for Estimating Shear Wave Velocity Profile using Borelog Data, *Soil Dynamics and Earthquake Engineering* (*Elsevier*), **Vol. 177**, 108424, 2024.

12. Puneet Kumar, Gaurav Bhat, Omkar Ingale, Daksh Goyal and **Balasubramanian Raman**, Affective Feedback Synthesis Towards Multimodal Text and Image Data, ***ACM Transactions on Multimedia Computing, Communications and Applications***, **Vol. 19**, No. 6, pp. 1-23, 190, 2023.

13. Rahul Kumar, Robin Singh Bhadoria, Naman Bhoj, Manoj Kumar Srivastav and **Balasubramanian Raman**, A Machine Learning Framework for Security and Privacy Issues in Building Trust for Social Networking, *Cluster Computing*(*Springer*), **Vol. 26**, 3907-3930, 2023.

14. Ridhi Arora and **Balasubramanian Raman**, BUS-Net: Breast Tumour Detection Network for Ultrasound Images using Bi-directional ConvLSTM and Dense Residual Connections, *Journal of Digital Imaging* (*Springer*), **Vol. 36**, No. 2, pp. 627-646, 2023.

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16. Puneet Kumar and **Balasubramanian Raman**, A BERT Based Dual-Channel Explainable Text Emotion Recognition System, *Neural Networks* (*Elsevier*), **Vol. 150**, pp. 392-407, 2022.

17. M. Tanveer, A.H. Rashid, Rahul Kumar and **Balasubramanian Raman**, Parkinson's Disease Diagnosis with Deep and Shallow Neural Networks: Survey and Comprehensive Evaluation, *Information Processing and Management* (*Elsevier*), **Vol. 59**, No. 3, pp. 1-50, 102909, 2022.

18. Nidhi Saxena and **Balasubramanian Raman**, Pansharpening scheme using bi-dimensional empirical mode decomposition and neural network, ***ACM Transactions on Multimedia Computing, Communications and Applications***, **Vol. 18**, No. 4, pp. 1-22, 108, 2022.

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21. Gyanendra, Samba Raju Chiluveru, **Balasubramanian Raman**, Manoj Tripathy and Brajesh Kumar Kaushik, Memory Efficient Architecture for Lifting-based Discrete Wavelet Packet Transform, ***IEEE Transactions on Circuits and Systems II: Express Briefs***, **Vol. 68**, no. 4, pp. 1373-1377, 2021.

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23. Rahul Kumar, Brajesh Kumar Kaushik, **Balasubramanian Raman** and Gaurav Sharma, A Hybrid Dehazing Method and Its Hardware Implementation for Image Sensors, *IEEE Sensors Journal*, **Vol. 21**, No. 22, pp. 25931-25940, 2021.

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27. Sahil Garg, Song Guo, Vincenzo Piuri, Kim-Kwang Raymond Choo and **Balasubramanian Raman**, Edge-Cloud Interplay Based on SDN and NFV for Next-Generation IoT Applications, *IEEE Internet of Things Journal*, **Vol. 7**, No. 7, pp. 5690-5694, 2020.

28. Amitesh Rajput, **Balasubramanian Raman** and Javed Imran, Privacy-preserving human action recognition as a remote cloud service using RGB-D sensors and deep CNN, *Expert Systems with Applications* (*Elsevier*), **Vol. 152**, 113349, 2020.

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39. Priyanka Singh, Nishant Agarwal and **Balasubramanian Raman**, Secure Data Deduplication using Secret Sharing Schemes over Cloud, *Future Generation Computer Systems* (*Elsevier*), **Vol. 88**, pp. 156-167, 2018.

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42. Priyanka Singh, **Balasubramanian Raman** and Nishant Agarwal, Towards Encrypted Video Tampering Detection and Localization Based on POB Number System Over Cloud, ***IEEE Transactions on Circuits and Systems for Video Technology***, **Vol.28**, No.9, pp.2116 - 2130, 2018.

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44. Himaanshu Gauba, Pradeep Kumar, Partha Pratim Roy, Priyanka Singh, Debi Prosad Dogra and **Balasubramanian Raman**, Prediction of Advertisement Preference by Fusing EEG Response and Sentiment Analysis, *Neural Networks* (*Elsevier*), **Vol. 92**, pp. 77-88, 2017.

45. Bhavik Patel, R P Maheshwari and **Balasubramanian Raman**, Multi-quantized local binary patterns for facial gender classification, *Computers and Electrical Engineering* (*Elsevier*), **Vol. 54**, pp. 271-284, 2016.

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51. Gaurav Bhatnagar, Jonathan Wu and **Balasubramanian Raman**, Robust Gray-scale Logo Watermarking in Wavelet Domain, *Computers & Electrical Engineering* (*Elsevier*), **Vol. 38**, No. 5, pp. 1164-1176, 2012.

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**B. Refereed International Journal Papers: Q2 (JCR 2024, published in June 2025)**

58. Puneet Kumar and **Balasubramanian Raman**, Interpretable Image Emotion Recognition: A Domain Adaptation Approach Using Facial Expressions, , Accepted for publication in *Multimedia Tools and Applications* (*Springer*), 2025.

59. Nitin Tyagi, Sarvagya Porwal, Pradeep Singh, **Balasubramanian Raman** and Neerja Garg, Spectral Band Attention Networks for Efficient Multi-Feature Fusion in Hyperspectral and RGB Data with Ensemble Deep Learning Networks, Accepted for publication in *Journal of Nondestructive Evaluation* (*Springer*), 2025.

60. Manish Kumar Bairwa, Abhishek, **R Balasubramanian** and Paramasivan Arumugam, Integrating Physics Insights into Machine Learning: A Case Study with Giant Dipole Resonance, Accepted for publication in *Physica Scripta* (*IOPscience*), 2025.

61. Nitin Tyagi, Sarvagya Porwal, Pradeep Singh, **Balasubramanian Raman** and Neerja Garg, Nondestructive Identification of Wheat Species using Deep Convolutional Networks with Oversampling Strategies on Near-Infrared Hyperspectral Imagery, Accepted for publication in *Journal of Nondestructive Evaluation* (*Springer*), 2024.

62. Anushka Joshi, **Balasubramanian Raman** and C Krishna Mohan, Real-Time Earthquake Magnitude Prediction Using Designed Machine Learning Ensemble Trained on Real and CTGAN Generated Synthetic Data, Accepted for publication in *Geodesy and Geodynamics*(*Elsevier*), 2024.

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64. Deepak Kumar, Pradeep Singh and **Balasubramanian Raman**, All Signals Point to Personality: A Dual-Pipeline LSTM-Attention and Symbolic Dynamics Framework for Predicting Personality Traits from Bioelectrical Signals, *Biomedical Signal Processing and Control* (*Elsevier*), **Vol. 96**, Part A, 106609, 2024.

65. Kishore Babu Nampalle, Anshul Pundhir, Pushpamanjari Ramesh Jupudi and **Balasubramanian Raman**, Towards Improved U-Net for Efficient Skin Lesion Segmentation, *Multimedia Tools and Applications* (*Springer*), **Vol. 83**, pp.71665-71682, 2024.

66. Puneet Kumar, Sarthak Malik and **Balasubramanian Raman**, Interpretable Multimodal Emotion Recognition using Hybrid Fusion of Speech and Image Data, *Multimedia Tools and Applications* (*Springer*), **Vol. 83**, pp.2837328394, 2024.

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## HONORS, AWARDS AND RECOGNITION

- I Rank holder in B. Sc. Examinations, A.M. Jain College, 1994.
- Gold Medalist in M. Sc. Examinations, Madras Christian College, 1996.
- DST travel award (Rs. 30,000) to attend *Vision Geometry XIII, IS&T/SPIE International Symposium on Electronic Imaging 2005*, San Jose, California, USA, January 2005.
- SPIE travel and registration award ($525) to attend *Vision Geometry XIII, IS&T/SPIE International Symposium on Electronic Imaging 2005*, San Jose, California, USA, January 2005.
- Best paper award for a research paper in "*International Conference of Cognition and Recognition (ICCR-08)*, April 10-12, 2008, Mysore, INDIA, 2008.
- **DST Young Scientist** travel and Registration award (Rs. 1,05,559) to attend *Wavelet Applications in Industrial Processing VI, 21st IS&T/SPIE International Symposium on Electronic Imaging 2009*, 18 22, Jan 2009, San Jose, California, USA.
- CSIR travel award (50% of Airfare) to attend *IEEE Symposium on Industrial Electronics & Applications (ISIEA 2011)*, September 25-28, 2011, Langkawi Island, MALAYSIA.
- Science and Engineering Research Board (A Statutory body under Department of Science & Technology) travel award (Rs. 84,240) to attend and present a paper in **IS&T/SPIE symposium on Electronics Imaging, Conference On Video Surveillance and Transportation Imaging Applications 2014**, held in **San Francisco, California, USA** February 2-6, 2014.
- Best Paper Award for a research paper in "*IEEE International Conference on Signal and Image Processing Applications (ICSIPA'2015)*", Kuala Lumpur, MALAYSIA.
- CSIR travel award (50% of Airfare) to attend *IEEE TENCON* 2016, November 22-25, 2016, Singapore, SINGAPORE.
- **One of the jury members** of 6th IDRBT Doctoral Colloquium held in Institute for Development and Research in Banking Technology (IDRBT), Hyderabad during 8-9, December 2016. High quality papers from ISI Kolkata, IISc Bangalore, IIT Kharagpur, IIT Madras, IIT Hyderabad, IIT Guwahati, IIIT Hyderabad, IIIT Bangalore and IIM Lucknow were presented and top 3 papers have got cash prizes.
- **Attended** Intel India Research Colloquium to represent Department of Computer Science and Engineering, IIT Roorkee during 9th October 2017 at Bangalore, INDIA.
- **Top 15 contenders of Outstanding Teachers' Award** for the year 2018 for Under Graduate Category at IIT Roorkee.
- **Guest Editor** in the Special issue on Blockchain-as-a-Service for Industrial Internet of Things and Big Data Applications (Baas-iot-big-data), **Future Generation Computer Systems**, The International Journal of eScience.
- **Guest Editor** in the Special issue on Edge-Cloud Interplay based on SDN and NFV for Next-Generation IoT Applications, **IEEE Internet of Things Journal**.
- Science and Engineering Research Board (A Statutory body under Department of Science & Technology) travel award (Rs. 1, 31, 300) to attend and present two papers in **The 5th Asian Conference on Pattern Recognition (ACPR 2019)**, held in **Auckland, NEW ZEALAND**, November 26-29, 2019.
- Member, Sakura Science Club, **JAPAN** (ID: 19105514).
- **Associate Editor**, Springer Nature Computer Science Journal, from April 2020.

- One of the **Board of Advisors** for a Start-up Sequoia Insilico Private Ltd (SIPL), New Delhi from April 2020.
- **Chairman**, Project Review Group (PRG) for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, India (March 2020 to September 2021).
- Best Paper Award for a research paper in "*5th International Conference on Computer Vision and Image Processing (CVIP'2020)*", IIIT Allahabad, INDIA.
- Reviewer, **Fulbright-Nehru Academic and Professional Excellence Fellowships** for Indian citizens for academics, teachers and professionals to teach or conduct research in the U.S. in the field of Computer Science, 2021.
- Sanchit Verma, my B.Tech project student, received the prestigious **Best Project Award** for his project titled "Rationalising Skin Disease Classification across Different Skin Tones" among the graduating students of Biotechnology at the 22nd Convocation held at IIT Roorkee, INDIA, 2023.
- Best Paper Award for a research paper in "*International Conference on Agriculture-Centric Computation 2023 (ICA 23)*", IIT Ropar, INDIA.
- Best e-Poster Award for a research paper in "*National Conference on Geosciences for Sustainable World 2024 (GSW 24)*", BHU Varanasi, INDIA.
- Received 2nd position in the Brain Response to Emotional Avatar challenge in *IEEE Faces & Gesture Recognition (FG'24)* held at Istanbul, TURKEY on 27th May 2024.
- **Guest Editor**, **Image and Vision Computing**.
- **Area Chair**, **33rd ACM International Conference on Multimedia, Dublin, Ireland**, 27-31 October 2025.
- Sutirtha Ghosh, my B.Tech Project student, received the prestigious **IndiaAI Fellowship** under the IndiaAI mission for the project entitled "Enhancing Transformers with Hyperbolic Embeddings for Hierarchical Data Representation" under my guidance, 2025.
- Sutirtha Ghosh, Ashutosh Kumar and Hrishit B P, my B.Tech project students, received the prestigious **Best Project Award** for their project titled "Chaos, Curvature, and Cognition: Advancing Reservoir Computing through Hyperbolic Embeddings and Symbolic Abstractions" among the graduating students of Biotechnology at the 24th Convocation held at IIT Roorkee, INDIA, 2025.

## ABROAD VISITS

- Participated as one of the fifty scientific researchers in the world, who was invited by ***International Center for Theoretical Physics,*** **Trieste, ITALY,** under **UNESCO** fellowship for three weeks course on "*School on Mathematical Problems in Image Processing* during 4th September 2000 to 22nd September 2000.
- Participated as one of the fifty scientific researchers in the world, who was invited by ***International Center for Theoretical Physics,*** **Trieste, ITALY,** under **UNESCO** fellowship for four weeks course on "*Summer School on Mathematical Control Theory* during 3rd September 2001 to 28th September 2001.
- Worked as a Post Doctoral Fellow in the **Computer Engineering and Computer Science Department, University of Missouri Columbia, Missouri -65211, USA** from 1st October 2001 to 30th June 2002.

- Worked as a Post Doctoral Associate in the **Department of Electrical and Computer Engineering, Rutgers, The State University of New Jersey, NJ -08855, USA** from 1st July 2002 to 28th April 2003.
- Presented a paper "Error analysis in the reconstruction of a 3D parabola from two arbitrary perspective views" in **Vision Geometry XIII, IS&T/SPIE International Symposium on Electronic Imaging - 2005**, held in **San Jose, California, USA** from 16th January 2005 to 21st January 2005.
- Delivered an invited talk entitled "Applications of Image Processing in health care" in **the Indo-German Workshop on Clean Room Technology, part of 5th World Congress on Bio-Mechanics**, held in **Munich, GERMANY** from 29th July 2006 to 4th August 2006.
- Presented a paper "Automated Stroke Classification in Tennis" in **International Conference on Image Analysis and Recognition (ICIAR 2007)**, held in **Montreal, CANADA** from 22nd August 2007 to 24th August 2007.
- Presented a paper "Multipurpose Watermarking Scheme using Essentially Non-Oscillatory Point-Value Decomposition" in **Wavelet Applications in Industrial Processing VI, 21st IS&T/ SPIE International Symposium on Electronic Imaging 2009** held in **San Jose, California, USA** from 18th January 2009 to 24th January 2009.
- Worked as a **Visiting Professor** under ***BOYSCAST Fellowship (2008-09)*** (Fellowship of US $3000 per month + perks, awarded by DST) at **University of Windsor, CANADA** from 18th May 2009 to 17th August 2009 (duration of THREE months) for conducting advanced training/research in area of Computational aspects of Geometry and Algebra under the mentorship of **Prof. Jonathan Wu**, Canada Research Chair, Department of Electrical and Computer Engineering, University of **Windsor, CANADA**.
- Presented a paper "Human Action Recognition in a Wide and Complex Environment" in **Real-Time Image and Video Processing 2011, part of IS&T/SPIE Electronic Imaging 2011**, held in **San Francisco, California, USA** from 23rd January 2011 to 27th January 2011.
- Presented a paper "Navigation and Surveillance using Night Vision and Image Fusion", in **IEEE Symposium on Industrial Electronics & Applications (ISIEA 2011)**, held in **Langkawi Island, MALAYSIA** from 25th September to 28th September 2011.
- Presented a paper "Recognizing Human Gestures Using a Novel SVM Tree" in **IS&T/SPIE symposium on Electronics Imaging, Conference On Image Processing: Machine Vision Application V, 2012**, held in **San Francisco, California, USA** from 22nd January 2012 to 26th January 2012.
- **Visited Stanford University, California, USA** to have a technical discussion with **Dr. Daniel L. Rubin, MD, MS**, Assistant Professor of Radiology and Medicine (Biomedical Informatics) in the problem of "Content Based Image Retrieval (CBIR) for Decision Support" on 26th January 2012.
- Delivered an invited talk entitled "Human Action Recognition in a Wide and Complex Environment" in the **School of Computer Sciences, Universiti Sains Malaysia**, Pulau Pinang, **MALAYSIA** on 7th June 2012.
- Conducted a workshop on "Advanced Algorithms in Computer Vision and Imaging using MATLAB" in **the School of Computer Sciences, Universiti Sains Malaysia, Pulau Pinang, MALAYSIA** during June 08-09, 2012.

- Delivered two invited talks on "Digital Image Watermarking using Mathematical Transformations and SVD" and "Recognizing Human Gesture Using a Novel SVM Tree" in the **Faculty of Computer Science and Information Technology, Universiti Putra Malaysia, Serdang, Selangor, MALAYISA** on 12th June 2012.
- Conducted a workshop and Seminar on "Content Based Image Retrieval and Computer Vision" in **the Centre for Visual Computing, Multimedia University, Cyberjaya, MALAYISA** on 13th June 2012.
- Delivered an invited talk on "Mathematics and its Applications in Real Life" in Linton University College, Mantin, Negeri Sembilan, **MALAYSIA** on 15th June 2012.
- Presented a paper "Joint Histogram Between Color and Local Extrema Patterns for Object Tracking" in **IS&T/SPIE symposium on Electronics Imaging, Conference On Video Surveillance and Transportation Imaging Applications 2013**, held in **San Francisco, California, USA** from 3rd February 2013 to 7th February 2013.
- Visited **National University of Singapore, SINGAPORE** to have a technical discussion with **Prof. Mohan S. Kankanhalli, Department of Computer Science, School of Computing**, in the areas of Visual Saliency in watermarking, Affective Video Analysis and Retrieval and Multimedia Security during July 01-06, 2013.
- Conducted a workshop on "Advanced Algorithms in Computer Vision and Imaging using MATLAB" in **the School of Computer Sciences, Universiti Sains Malaysia, Pulau Pinang, MALAYSIA** during July 08-09, 2013.
- Presented a paper "Development of a multispectral active stereo vision system for video surveillance applications" in **IS&T/SPIE symposium on Electronics Imaging, Conference On Video Surveillance and Transportation Imaging Applications 2014**, held in **San Francisco, California, USA** from 2nd February 2014 to 6th February 2014.
- Visited **SeSaMe Research Centre at National University of Singapore, SINGAPORE** to have a technical discussion with **Prof. Mohan S. Kankanhalli, Department of Computer Science, School of Computing**, in the areas of Visual Saliency in watermarking, Multi-camera/Multi-sensor surveillance, Multi-agent systems and PTZ camera networks during July 02-07, 2014.
- Conducted a workshop on "Digital Image Watermarking and Optical flow problems" and have a technical discussion with **Prof. C. Eswaran, Faculty of Computing and Informatics, Multimedia University, Cyberjaya Campus, MALAYSIA** in the area of Multimedia Security during July 08-10, 2014.
- Visited **iLink Systems** at **Seattle, Washington, USA** to have a technical discussion in the areas of Data Science and Machine learning during 27/11/2014 to 3/12/2014.
- Visited **University at Albany - State University of New York (SUNY), NY, USA** to have a technical discussion with **Dr. Pradeep Atrey's** research group and Delivered an invited talk on "Applications of Fractional and Multi-resolution Transforms in Information Security, Optical flow Problems and Content Based Image Retrieval" in the **Department of Computer Science** during 4/12/2014 to 6/12/2014.
- Visited **MIMOS Berhad, Technology Park Malaysia, Kuala Lumpur, MALAYSIA** to have a technical discussion with **Prof. Arichandran's** R&D group and delivered an invited talk on "Machine Learning in Vision, Information Security and Content Based Image Retrieval" during 31/5/2015 to 3/6/2015.

- Visited **Telekom Malaysia, Kuala Lumpur, MALAYSIA** to have a technical discussion with **Dr. Ettikan Kandasamy Karuppiah's** R&D group and delivered an invited talk on "Applications of Soft Computing in Vision, Information Security and Content Based Video Retrieval" during 4/6/2015 to 7/6/2015.
- Presented a paper "Fusion of Submanifold and Local Texture Features for Palmprint Authentication" in **IEEE International Conference on Visual Communications and Image Processing (VCIP'2015)**, held in **NTU, Singapore, SINGAPORE** during 13-16, December 2015.
- Presented a paper "A Reversible Robust Watermarking Scheme Based on Two out of Two Visual Cryptography Approach" in **IEEE TENCON** 2016 held in **Singapore, SINGAPORE** during 22-25 November 2016.
- Attended The **IEEE International Conference on Multimedia & Expo (ICME)** held in **HONG KONG** during 10-14 July 2017.
- Attended **The 4th Asian Conference on Pattern Recognition (ACPR 2017)** held in **Nanjing, CHINA** during 26-29 November, 2017.
- IIT Roorkee team named **Triangulation**, Vaibhav Gosain, Adarsh Kumar, Saharsh Luthra and myself as coach has bagged 56th position & 68th rank in the World and 2nd among Indian teams in the World Finals of 42nd ACM International Collegiate Programming Contest (ICPC World Finals) held at Peking University, Beijing, **CHINA** between 15-20 April 2018. IIT-R is one amongst 8 teams that have been selected from India and 140 teams from all over the world.
- Visited Department of Computer Science and Intelligent Systems, **Osaka Prefecture University, Osaka, JAPAN** under Japan Science and Technology Sakura Science Exchange Program and delivered an invited talk on "Machine Learning in Imaging and Vision" during 7/6/2018 to 14/6/2018.
- Visited Department of Natural Sciences, **International Christian University, Tokyo, JAPAN** to have a technical discussion with **Dr. Andrea Kutics** and delivered an invited talk on "Machine Intelligence and its Applications" during 10/6/2018 to 11/6/2018.
- IIT Roorkee team named **Hold right there Sparky!!**, Devanshu Agarwal, Samarth Joshi, Abhishek Kanhar and myself as coach has bagged 41st position & 49th rank in the World and 2nd among Indian teams in the World Finals of 43rd International Collegiate Programming Contest (ICPC World Finals) held at Porto, **PORTUGAL** between 31st March - 5th April 2019. IIT-R is one amongst 8 teams that have been selected from India and 135 teams from all over the world.
- Visited Department of Computer Science and Intelligent Systems, **Osaka Prefecture University, Osaka, JAPAN** to have a technical discussion with **Dr. Masakazu Iwamura** on 12/6/2019.
- Visited iCeMS, **Kyoto University, Kyoto, JAPAN** and delivered an invited talk on "Applications of EEG Signal and Biomedical Image Processing" during 7/6/2019 to 22/6/2019.
- Visited Image Department, **Institut d'Électronique et de Télécommunications de Rennes, Institut National des Sciences Appliquées de Rennes (INSA), Rennes, FRANCE** to have a technical discussion with **Prof, Kidiyo KPALMA** and delivered an invited talk on "Machine Learning in Imaging and Vision" during 30/6/2019 to 7/7/2019.
- Visited **Dipartimento di Informatica, Universita' degli Studi di Milano, Milan, ITALY** to have a technical discussion with **Prof. Vincenzo Piuri** on 11/7/2019.

- Presented a paper "Privacy preserving smart surveillance using local color correction and optimized ElGamal cryptosystem over cloud" and also chaired a session in **IEEE International Conference on Cloud Computing (CLOUD 2019)**, held in **Milan, ITALY** during 8-13, July 2019.
- Delivered a keynote "Applications of AI in Imaging and Vision" and chaired a session in the $\mathbf{9}^{th}$ **International Conference on Soft Computing for Problem Solving (SocProS'2019)**, **Liverpool Hope University, Liverpool, UK** during 2-4, September, 2019.
- Presented two papers (a) "Segment Level Approach to Speech Emotion Recognition using Transfer Learning" and (b) "Generative Adversarial Network based Ensemble Technique for Automatic Evaluation of Machine Synthesized Speech", chaired a session and evaluated the best poster paper as one of the IAPR best poster paper committee members in **5th IAPR Asian Conference on Pattern Recognition (ACPR 2019)**, held in **Auckland, NEW ZEALAND** during 26-29, November 2019.
- Visited iCeMS, **Kyoto University, Kyoto, JAPAN** to have a technical discussion with **Dr. Ganesh Pandian Namasivayam** during 6/12/2019 to 7/12/2019.
- Visited Department of Computer Science and Intelligent Systems, **Osaka Prefecture University, Osaka, JAPAN** under Japan Science and Technology Sakura Science Exchange Program (Member ID: 19105514) and delivered an invited talk on "Encrypted Domain Processing of Big Multimedia Data over Cloud" during 4/12/2019 to 18/12/2019.
- IIT Roorkee team named **Area 151**, Rahul Dugar, Piyush Sethia, Harsh Bhartiya and myself as coach has bagged 60th rank in the World and 4th among Indian teams in the World Finals of 45th International Collegiate Programming Contest (ICPC World Finals) held at Dhaka, **BANGLADESH** between 06-11, November, 2022. IIT-R is one amongst 8 teams that have been selected from India and 145 teams from all over the world.
- Visited Discipline of Mathematics and Statistics in the School of Electrical Engineering, Computing and Mathematical Sciences, **Curtin University, Perth, AUSTRALIA** under SERB MATRICS project to have a technical discussion with **Dr. Ritu Gupta** and delivered an invited talk on "Integrating Interpretable AI with Emotion and Action Analysis: Recent Advances and Methodologies" during 3/12/2023 to 10/12/2023.
- Visited **N-CRiPT (NUS Centre for Research in Privacy Technologies), at National University of Singapore, SINGAPORE** to have a technical discussion with **Prof. Mohan S. Kankanhalli, Department of Computer Science, School of Computing**, in the areas of Multimedia Processing and the Vision Problems related to Deep Learning, during 19/12/2023 to 22/12/2023.
- Visited Department of Cyber Security, School of Electrical Engineering and Computer Science, **The University of Queensland, Brisbane, AUSTRALIA** to have a technical discussion with **Dr. Priyanka Singh** in the areas of Multimedia Processing, Information Security and the Vision Problems related to Deep Learning, during 29/06/2024 to 07/07/2024.
- IIT Roorkee team named **Buriburizaemon**, Rudransh Agarwal, Lakshya Joshi, Tejas Sajwan and myself as coach have bagged the 108th rank in the World and 8th among Indian teams in the World Finals of the 48th International Collegiate Programming Contest (ICPC World Finals) held at Astana, **KAZAKHSTAN** between 15-20, September, 2024. IIT-R is one of 11 teams that have been selected from India and 141 teams from all over the world.
- Presented a paper "Towards Engagement Prediction: A Cross-Modality Dual-Pipeline Approach Using Visual and Audio Features" in **32nd ACM Multimedia (MM24)**, held in **Melbourne, AUSTRALIA** during 28 October - 1 November 2024.

- Visited Department of Electrical Engineering, **American University of Sharjah, Sharjah, UAE** under ANRF/SERB MATRICS project to have a technical discussion with **Dr. Usman Tariq** and delivered an invited talk on "Bridging Modalities: Advances in AI for Engagement, Seismic Prediction, and Domain-Specific Challenges" on 10/12/2024.
- Visited the Department of Computer Science, **BITS Dubai, Dubai, UAE** under the ANRF/SERB MATRICS project to have a technical discussion with **Dr. Elakkiya R** and delivered an invited talk on "Bridging Modalities: Pioneering AI Advances in Engagement, Seismic Prediction, and Specialized Challenges" from 8/12/2024 to 14/12/2024.
- Visited School of Computer Science, Australian Artificial Intelligence Institute, Faculty of Engineering and Information Technology, **University of Technology Sydney, AUSTRALIA** under the ANRF TARE project to have a technical discussion with **Dr. Mukesh Prasad** during 01/01/2025 to 05/01/2025.
- Visited Discipline of Mathematics and Statistics in the School of Electrical Engineering, Computing and Mathematical Sciences, **Curtin University, Perth, AUSTRALIA** under the ANRF TARE project to have a technical discussion with **Dr. Ritu Gupta** during 05/01/2025 to 09/01/2025.
- Research Visit to **Mandalay Technological University, Mandalay, MYANMAR** with the team of 7 IIT Roorkee Professors as part of the project titled "Enhancing the Capacity Building in Science and Technology through Close Collaboration between Mandalay Technological University and Ho Chi Minh City University of Technology". This initiative falls under the CLMV Action Plan 2019-2020 and is funded by ASEAN-INDIA between 09/03/2025 to 15/03/2025.
- Research Visit to **Ho Chi Minh City University of Technology (HCMUT), VIETNAM** with the team of 7 IIT Roorkee Professors as part of the project titled "Enhancing the Capacity Building in Science and Technology through Close Collaboration between Mandalay Technological University and Ho Chi Minh City University of Technology". This initiative falls under the CLMV Action Plan 2019-2020 and is funded by ASEAN-INDIA between 15/03/2025 to 22/03/2025.
- Conducted the PhD Defense of Prakash Chandra Chhipa as a Committee member and visited the Machine Learning Group, EISLAB, Department of Computer Science, Electrical and Space Engineering, **Luleå University of Technology (LTU), Luleå, SWEDEN** between 06/04/2025 to 10/04/2025.
- Visited School of Computer Science and Statistics, **Trinity College Dublin, IRELAND** to have a technical discussion with **Dr. Subrahmanyam Murala** during 01/06/2025 to 08/06/2025.
- Visited the Intelligent Vision Processing Lab (IVPL), Department of Artificial Intelligence Engineering, **Sookmyung Women's University, Seoul, SOUTH KOREA** to have a technical discussion with **Prof. Byung-Gyu Kim** and delivered a talk on "Integrating Interpretable AI with Emotion and Action Analysis" during 29/06/2025 to 04/07/2025.
- Visited School of Computer Science and Statistics, **Trinity College Dublin, IRELAND** to have a technical discussion with **Dr. Subrahmanyam Murala** during 13/09/2025 to 21/09/2025.
- **USA**, B1/B2 (Visiting/Business) visa holder for 10 years (December 2004 to December 2014).
- Visited **MALAYSIA** (January 2005), **AUSTRIA** (August 2006), **USA** (June, July 2009), **SINGAPORE** (February 2013 and January 2014), **FRANCE** (March 2019), **WALES, UK** (September 2019) and **THAILAND** (November 2019 and March 2025).

## INVITED TALKS/LECTURES

1. Delivered a talk on "Computing the Curve-Skeletons of General 3D Objects", in ***Center for Advanced Information Processing (CAIP), Department of Electrical and Computer Engineering, Rutgers, the State University of New Jersey, USA***, April 2003.

2. Delivered an invited talk on "Computing the Curve-Skeletons of General 3D Objects", ***Center for Artificial Intelligence and Robotics (CAIR)-DRDO, Bangalore***, June 2003.

3. Invited as a guest speaker in the mini symposium on ***Methods for Image Understanding*** at ***JFWTC, GE India Technology Center, Bangalore*** (organized by ***Imaging Technologies group***) and delivered a talk on "Computing the Curve-skeletons of general 2D/3D objects by Generalized potential field" along with 6 faculty of top-rated schools in India and USA, July 2004.

4. Delivered an invited talk on "Digital Watermarking using Mathematical Transformations and SVD" in a ***CEP course on Emerging Techniques for Image Processing, Defence Electronics Applications Laboratory - DRDO, Dehradun***, 4-8 October 2010.

5. Delivered Series of expert lectures on "Advanced Algorithms in Digital Watermarking and CBIR" in the ***"Faculty Development Programme on Computer Vision, Pattern Recognition and Image Processing***" conducted by Department of Computer Science and Engineering, ***NIT Delhi*** from 18-22 June 2013.

6. Delivered Series of expert lectures (1) "Watermarking Algorithms Based on Fractional Transformations and Visual Cryptography", (2) "Chaos Based Cryptosystem for Still Visual Data" and (3) "Information Security in Multi-resolution Transformations" in the ***Workshop on "Cryptography and Information Security***" conducted by Department of Electronics and Communication Engineering, ***NIT Calicut*** from 23-25 January 2015.

7. Delivered series of invited lectures on (1) "Multimedia Security over cloud" and (2) "Machine Learning in Imaging and Vision" in the Department of Computer Science and Engineering at ***IIT Ropar*** on 04/11/2017.

8. Delivered an invited talk on "Machine Learning and its Applications" in the Department of Computer Science and Engineering at ***MNIT Jaipur*** on 19/01/2018.

9. Delivered an expert talk on "Machine Learning in Imaging and Vision" in E&ICT academy for a faculty development programme, ***IOT with Machine Learning & Artificial Intelligence*** during January 20-24, 2018 at ***MNIT Jaipur***.

10. Delivered an invited talk on "Machine Learning and its Applications" in the Department of Computer Science and Engineering at ***IIIT-DM Jabalpur*** on 24/02/2018.

11. Delivered an invited talk on "Machine Learning in Imaging and Video Analytics" in the Department of Information Technology at ***IIIT Allahabad*** on 03/04/2018.

12. Delivered an invited talk on "Machine Vision" in the Department of Computer Science and Engineering at ***MNNIT Allahabad*** on 04/04/2018.

13. Delivered an invited talk on "Challenges in Video Analytics" in the Department of Computer Science and Engineering at ***NIT Manipur*** on 24/05/2018.

14. Delivered an invited talk on "Encrypted Domain Processing" in Computer Vision and Pattern Recognition Unit, ***Indian Statistical Institute, Kolkata*** on 22/06/2018.

15. Delivered series of expert lectures on (1) Human Action Recognition (2) Mathematical Elements of Machine Learning in Two Week National Workshop & Summer School on Advances in Deep Architectures For Signal, Image & Vision Applications (ADASIVA'18) in the Department of Information Technology at ***IIIT Allahabad*** during 15-17 July, 2018.

16. Delivered an invited talk on "AI and its Applications in Imaging and Vision" in the Department of Computer Science and Engineering at ***IIT (BHU), Varanasi*** on 15/11/2018.

17. Delivered an invited lecture on "Video Analytics Applications" at ***Honeywell, Bangalore*** on 28/11/2018.

18. Delivered a keynote on "AI and its Applications" in 13th IEEE International Conference on Industrial and Information Systems (IEEE ICIIS'18) at ***IIT Ropar*** during 01-02 December 2018.

19. Delivered series of expert lectures on (1) Machine Learning and Its Applications and (2) Medical Imaging in a workshop on "Signal and Image Processing for Medical Applications (SIPMA'19)" in the Department of Electronics and Communication Engineering at ***VNIT Nagpur*** during 20-24 February, 2019.

20. Delivered an invited talk on "Machine Learning and its Applications in Imaging and Vision" ***IIITM Gwalior*** on 06/03/2019.

21. Delivered an expert lecture on Applications of Biomedical Signal & Image Processing in a five days Short Term Course/ Faculty Development Program on "Recent Trends in Biomedical Signal Processing and VLSI Design (RTBSV-2019)" in the Department of Electronics and Communication Engineering at ***NIT Jalandhar*** during May 30- June 03, 2019.

22. Delivered an expert lecture on Machine Learning in Imaging and Vision in a National Workshop & Summer School on Advances in Deep Architectures For Signal, Image & Vision Applications (ADASIVA'19) in the Department of Information Technology at ***IIIT Allahabad*** during 24-30 June, 2019.

23. Delivered series of expert lectures on (1) Machine Learning Applications in Imaging and Vision and (2) Encrypted Domain Processing of Big Multimedia Data over Cloud in STTP on Big Data and IoT: Data Analytics, Security & Privacy in Computer Engineering Department at ***NIT Surat*** during 24-28 June, 2019.

24. Delivered series of expert lectures on (1) Machine Learning in Imaging and Vision and (2) Applications of Maching Learning in Medical Imaging in "One Week Summer School On Computer Vision and Pattern Recognition using Machine Learning (CVPRML-19)" in the Department of Electronics and Communication Engineering at ***NIT Silchar*** during 22-26 July, 2019.

25. Delivered a keynote on "Machine Vision and Encrypted Domain Processing: A Mathematical Approach" in the International Conference on Computational Mathematics and its Applications (CMA 2019) at ***IIT Indore*** during November 12-14, 2019.

26. Delivered series of expert lectures on (1) Information Security and (2) Privacy Preservation in Video Analytics in the "FDP on Cyber Security Using Machine Learning/Big Data Analytics" in the Department of Computer Science and Engineering at ***NIT Patna*** during 17-21 February, 2020.

27. Delivered an expert lecture on Data Science & Deep Learning in "One Week Short Term Training Program (STTP) on Data Science & Learning Systems for Engineering Research & Design" in the Department of Computer Science and Engineering at ***NIT Kurukshetra*** during 24-30 June, 2020 (through Webex meeting).

28. Delivered an expert lecture on Applications of Machine/Deep Learning in Imaging and Vision in "One Week Continuing Education Programme on Big Image Data Processing using Deep Learning Techniques" in the Department of Computer Science and Engineering at ***NIT Warangal*** during 27-31 July, 2020 (through Goto meeting).

29. Delivered an expert lecture on Applications of AI in Imaging and Vision in "Five Days Online Short-Term Training Programme (STTP) on Recent Advances in Artificial Intelligence" in the Department of Computer Science and Engineering at ***NIT Uttarakhand*** during 27-31 July, 2020 (through Google meet).

30. Delivered an expert lecture on Applications of Machine/Deep Learning in Imaging and Vision in "Recent research trends in Computer Science" in the Department of Computer Science and Engineering at ***NIT Jalandhar*** during 24-28 August, 2020 (through Google meet).

31. Delivered an expert lecture on Dimensionality Reduction Algorithms in the "Workshop on Digital Image Processing and its Applications" in the Department of Computer Science and Engineering at ***NIT Arunachal Pradesh*** during 24-28 August, 2020 (through Google meet).

32. Delivered an expert lecture on Applications of Machine Learning in Video Analytics in the "Russian-Indian Network (RIN) on Data Analytics" at ***IIT Bombay*** during 6-7 October, 2020 (through Webex).

33. Delivered an expert lecture on Information Security in the "FDP on Cyber Security" in the Department of Computer Science and Engineering at ***NIT Patna*** during 05-11 October, 2020.

34. Delivered an expert lecture on Information Security in the One Week Webinar on "Cyber Security Techniques with Application sponsored by ISEA Project Phase-II, MeitY, in the Department of Computer Science and Engineering at ***IIT(ISM) Dhanbad*** during 05-09 October, 2020.

35. Delivered an expert lecture on Applications of Machine/Deep Learning in Imaging and Vision in the "Short Term course on Deep Learning Applications in Image Processing under Security ambit" in the Dept. of Electronics and Communication Engineering at ***NIT Rourkela*** during 05-09 October, 2020.

36. Delivered an expert lecture on Encryption Domain Processing and its Applications in the "TEQIP-III Sponsored One Week ONLINE Short Term Training Programme (STTP) on Data Security and Privacy (DSP 2020)" in the Dept. of Computer Engineering at ***NIT Surat*** during 26-30 October, 2020.

37. Delivered an expert lecture on Applications of Machine and Deep Learning in Biomedical data in the "TEQIP-III Sponsored Short Term Course (STC) on Artificial intelligence driven biomedical data analysis for disease diagnosis" in the Dept. of Electrical Engineering and Dept. of Mathematics at ***IIT Indore*** during 05-10 November, 2020.

38. Delivered an expert lecture on Introduction to basics of ML and its Applications in the "e-workshop Mathematical and Statistical Methods for Machine Learning (MSML 2020)" in the Dept. of Mathematics at ***NIT Hamirpur*** during 07-11 November, 2020.

39. Delivered an expert lecture on Applications of Machine/Deep Learning in Vision and Imaging in the "IEEE CIS Summer School on Emerging Research Trends in Computational Intelligence: Theory and Applications" in the Dept. of Mathematics at ***IIT Indore*** during 26-30 November, 2020.

40. Delivered a keynote on "Applications of Machine/Deep Learning in Vision and Imaging" in 15th IEEE International Conference on Industrial and Information Systems (IEEE ICIIS'20) at ***IIT Ropar*** during 26-27 November 2020.

41. Delivered an expert lecture on Applications of Machine/Deep Learning in Vision and Imaging in a National Workshop & Summer School on Advances in Deep Architectures For Signal, Image & Vision Applications (ADASIVA'20) in the Department of Information Technology at ***IIIT Allahabad*** on 3rd December 2020.

42. Delivered a keynote on "Multimedia Security over Cloud" in the 5th IAPR International Conference on Computer Vision and Image Processing (CVIP'20) at ***IIIT Allahabad*** during 04-06 December 2020.

43. Delivered an expert lecture on Multimedia Security over cloud in the "FDP on Multimedia and Security" in the Department of Computer Science and Engineering at ***NIT Patna*** during 16-20 December, 2020.

44. Delivered an invited lecture on Applications of Fractional Transforms in Image Processing in an International Workshop on Fractional Derivatives: Theory & Computations with Applications in the Department of Mathematics at ***IIT(BHU) Varanasi*** during 12-14 November, 2021.

45. Delivered an expert lecture on Information Security in the "FDP on Application of Cryptographic Tools for Data and Image Securities" in the Department of Computer Science and Engineering at ***IIIT Kalyani*** during 06-10 December, 2021.

46. Delivered an expert lecture on Deep Learning in Imaging and Vision in a National Workshop & Summer School on Advances in Deep Architectures For Signal, Image & Vision Applications (ADASIVA'21) in the Department of Information Technology at ***IIIT Allahabad*** during 06-10 December, 2021.

47. Delivered an expert lecture on Multimedia Security over cloud in the "FDP on Research Trends in Security and Computing" in the Department of Computer Science and Engineering at ***NIT Uttarakhand*** during February 28 - March 04, 2022.

48. Delivered a keynote on "Machine Learning in Imaging and Vision" in International Conference on Computational Intelligence and Network Security (ICCINS-2022) at ***NIT Raipur*** during 03-04 March 2022.

49. Delivered an expert lecture on Machine Learning in Imaging and Vision in the "FDP on Research Avenues in Machine Learning and AI for societal issues" in the Department of Computer Science and Engineering at ***NIT Silchar*** during 14-18 March, 2022.

50. Delivered an invited lecture "Artificial Intelligence and its Applications" in the Teachers Training Workshop for Government school teachers in state of Uttarakhand Science teachers (Tinkering Lab In Charge at School level) from 26 Senior Secondary Schools from all 13 districts, ***IIT Kanpur*** in collaboration with Samagra Shiksha Uttarakhand and IIT Roorkee during 23-24 May, 2022.

51. Delivered an expert lecture on Video Analytics using Machine/Deep Learning in the Two day Technology Update Programme on "Computer Vision - Object Identification & Odometry" at ***Vikram Sarabhai Space Center, ISRO, Trivandrum*** during 4-5, August, 2022.

52. Delivered a keynote on "Vision and Emotion Recognition" in the IAPR International Conference on Computer Vision and Machine Intelligence (CVMI'22) at ***IIIT Allahabad*** during 12-13, August, 2022.

53. Delivered an invited lecture "Artificial Intelligence and its Applications" to the 35 cadets of ***Indian Military Academy (IMA), Dehradun and Unit of Science and Educational*** in collaboration with IIT Roorkee during 19-21 September, 2022.

54. Delivered an expert lecture on AI and its Applications in Imaging and Vision in the FDP on "IoT Induced Artificial Intelligence for Emerging Computing Paradigms" in the Department of Information Technology at ***NIT Jalandhar*** during 4-8 October, 2022.

55. Delivered a keynote on Information Security and Data Analytics in Imaging and Vision in Second International Conference on Security, Privacy and Data Analytics (ISPDA-2022) at ***NIT Surat*** during 13-15, December 2022.

56. Delivered a series of lectures on "Towards Explainable AI" in SERB-KARYASHALA sponsored one week high end workshop on Explainable AI: Theoretical Insights and Engineering Applications in the Department of Computer Science and Engineering, ***NIT Silchar*** during 03-09, July 2023.

57. Delivered a Keynote on "Towards Explainable AI" in the 2nd International Conference on Intelligent Computing Systems and Applications (ICICSA-2023) in the Department of Computer Science and Engineering, ***NIT Silchar*** during 22-23, September 2023.

58. Delivered an expert lecture on "Generative, Interpretable and Explainable AI with Emotion and Action Analysis" in the one Week Online Short-Term Course (STC) on Machine Learning and Deep Learning for Real Time IoT Applications in the Department of Information Technology, ***NIT Jalandhar*** during 14-18, March 2024.

59. Delivered an expert lecture on "Generative AI with Emotion and Action Analysis" in AICTE Sponsored online STTP on Next Generation AI Research Perspectives in the Department of Computer Science and Engineering, ***NIT Nagaland*** during 18-22, March 2024.

60. Delivered an expert lecture on "Integrating Interpretable AI with Emotion and Action Analysis" in SERB High-End Workshop (KARYASHALA) on A Practical Approach to Machine Learning and Deep Learning for Computer Vision Applications using High End Computing Resources" in the Department of Computer Science and Engineering, ***MNNIT Allahabad*** during 15-22, March 2024.

61. Delivered a special address on "Generative AI with Emotion and Action Analysis" at InterSys 2024, held in the Department of Computer Science, ***BITS Pilani Dubai Campus*** during 16-17, May 2024.

62. Delivered a Plenary talk on "AI in Lung Cancer Screening and Therapeutics (with intro to Radiomics and Radiogenomics)" at NALCCON 2024, held in ***AIIMS Rishikesh*** during 05-06, October 2024.

63. Delivered an expert lecture on "Medical Signal/Image Processing" in AICTE Training And Learning (ATAL) Sponsored FDP on Leveraging Healthcare: Innovations, Technology and Applications (HealthITA) in the Department of Computer Science and Engineering, ***NIT Delhi*** during 16-21, December 2024.

64. Delivered an expert lecture on "Generative AI" in the Winter FDP on AI and Deep Learning JOINTLY organized by IIITDM Jabalpur, MNIT Jaipur, IIT Roorkee, NIT Patna, IIT Guwahati and NIT Warangal during 01-23, February 2025.

65. Delivered an expert lecture on "Medical Signal/Image Processing" in 2-Week Online Faculty Development Program on AI-based Image Processing for Bio-medical Applications (AIIPBM-2025) under E & ICT Academy, Ministry of Electronics and IT, Govt of India in the Department of Electronics and Communication Engineering, ***NIT Jamshedpur*** during 17-28, February 2025.

66. Delivered an invited lecture on "Generative AI in Vision and Imaging" in the Department of Computer Science and Engineering, ***MNIT Jaipur*** on 22/04/2025.

67. Delivered a series of lectures 1. "PCA and LDA" and 2. "Information Security" in Short-Term E & ICT Academy Course on Mathematics of AI: Algorithms and Beyond in the Department of Mathematics, ***MNIT Jaipur*** during 26-31, May 2025.

68. Delivered an invited lecture on "Fundamentals of Image Processing and Computer Vision" in the Workshop on AI-Powered Image Processing: Techniques and Applications in the Department of Computer Science and Engineering, ***IIITDM Kancheepuram*** on 23/06/2025.

69. Delivered an expert lecture on "Integrating Interpretable AI with Emotion and Action Analysis" in one Week Online Faculty Development Program on Modern Computer Vision under E & ICT Academy, Ministry of Electronics and IT, Govt of India in the Department of Computer Science and Engineering, ***MNIT Jaipur*** on 17th September 2025.

## PROFESSIONAL ACTIVITIES

1. Reviewer of Several top International Journals and Conferences

2. Technical, Advisory and International Program Committee member for various conferences.

3. Coordinated Ten QIP Short term courses at IIT Roorkee
    - Vision, Graphics and Image Processing (2007)
    - Robotic Vision and Image Processing (2008)
    - Vision, Graphics, Robotics and their Applications (2009)
    - Robotic Vision and Image Processing (2011)
    - Image Processing and Computer Graphics for Scientific Visualization (2012)
    - Image Processing with Multidisciplinary Applications (2014)
    - Mathematical Modelling and Numerical Computation Using Matlab (2015)
    - Vision, Graphics and their Applications (2016)
    - Machine Learning and Its Applications (2018)
    - Deep Learning and its Applications (2021)
4. Instructor, Finishing School Programme, Continuing Education, IIT Roorkee, 2007 and 2008.
5. Established Computer Vision, Graphics and Image Processing Laboratory at Department of Mathematics, IIT Roorkee under MHRD, DST and ISRO Projects, 2007-08.
6. Under my coach, the team ***"the 65th Bit"***, comprises of Sharat Ibrahimpur, Dipit Grover and Tarun Goyal from IIT Roorkee grabbed 61st rank in the *37th Annual World Finals of the ACM International Collegiate Programming (ACM ICPC)* Contest held in **Saint Petersburg, RUSSIA** in 2013. The team secured 25th position among Asian teams and 1st among other Indian Teams.
7. Served as an Examiner for many Ph.D theses of IIT Bombay, IIT (ISM) Dhanbad, IIT Mandi, IIT Guwahati, IIT Gandhinagar, IIT Kharagpur, IIT (BHU) Varanasi, IIT Indore, IIT Patna, IIT Hyderabad, IIT Ropar, CSIR-CSIO Chandigarh, DIAT Pune, IIIT Allahabad, IIITDM Jabalpur, IIITDM Kancheepuram, IIIT Naya Raipur, IIIT Sri City, IIIT Hyderabad, IDRBT Hyderabad, MNIT Jaipur, MNNIT Allahabad, NIT Trichy, VNIT Nagpur, NIT Delhi, NIT Rourkela, NIT Surat, NIT Calicut, NIT Karnataka Surathkal, NIT Uttarakhand, NIT Silchar, NIT Kurukshetra, NIT Agartala, NIT Warangal, NIT Durgapur and BITS Pilani (Hyderabad and Pilani).
8. Served as an Examiner for many M.S theses of IIT Tirupati, IIT Delhi and IIIT Hyderabad.
9. Served as a Foreign Examiner for five Ph.D theses of Faculty of Computing and Informatics, Multimedia University, MALAYSIA.
10. Delivered Invited Talks (more than 350), many places in India and 16 in abroad.
11. Expert, Selection Committee member for **Department of Computer Science and Engineering, NIT Uttrakhand**, May 2014.
12. Attended Preliminary Design Review (PDR part 1) Committee meeting as a member to evaluate a project entitled "Design and Development of Submarine Periscope" at **Instrumentation Research and Development Establishment (IRDE), DRDO, Dehradun**, February 2015.
13. Conducted a Ph.D viva (through Video conferencing) of Dr. Sreeramula Sankariah, **Faculty of Information and Communication Engineering, Multimedia University, Cyberjaya Campus, Malaysia** on "Performance Optimization of Real-Time Video Processing Multicore Architecture" in April 2015.

14. Attended Preliminary Design Review (PDR part 2) Committee Meeting as a member to evaluate a project entitled "Design & Development of Submarine Periscope" at **Instrumentation Research and Development Establishment (IRDE), DRDO, Dehradun** on 18th August 2015.

15. Attended Design Review Committee Meeting as a member to evaluate a project at **Instrumentation Research and Development Establishment (IRDE), DRDO, Dehradun** on 5th October 2015.

16. **Convener, International Conference on Computer Vision and Image Processing (CVIP 2016), IIT Roorkee, February 26-28, 2016.**

17. Expert, Selection Committee member for **Department of Computer Science and Engineering, NIT Uttrakhand**, April 2016.

18. **Organizing Chair, Second International Conference on Computer Vision and Image Processing and Workshop on Multimedia (CVIP-WM 2017), IIT Roorkee, September 9-12, 2017.**

19. One of the Course coordinators in **Analysis and Applications of Document Image Processing**, A Global Initiative of Academic Networks (**GIAN**) course, IIT Roorkee, December 4-8, 2017. (other Course coordinators: Dr. Partha Pratim Roy, IIT Roorkee and Josep Llads, Computer Vision Center, Universitat Autnoma de Barcelona, SPAIN).

20. One of the Course coordinators in **Machine Learning & its Applications**, E&ICT Academy course, IIT Roorkee, February 01-05, 2018 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

21. One of the Expert members of Two days Curriculum Development Workshop in **the Department of Computer Science and Engineering, NIT Uttarakhand** during February 17-18, 2018.

22. One of the coordinators in the **Workshop on Computer Vision and Image Processing**, (Sponsored by E&ICT Academy course and Mathworks), IIT Roorkee, March 09-11, 2018 (other coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

23. One of the coordinators in the **Workshop on Machine Learning and Its Applications**, (Sponsored by Institute Computer Centre), IIT Roorkee, April 18-20, 2018 (other coordinators: Dr. Navneet Kumar Gupta and Dr. Partha Pratim Roy, IIT Roorkee).

24. Served as an External Expert for Thesis Proposal Seminar of a PhD student at **IIT Ropar** on 20th August 2018.

25. One of the Course coordinators in **Document Image Processing and its Applications**, E&ICT Academy course, IIT Roorkee, September 04-08, 2018 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

26. **Organizing Chair, Third International Conference on Computer Vision and Image Processing (CVIP 2018), IIIT-DM Jabalpur, September 29-October 01, 2018.**

27. One of the Course coordinators in **Imaging Application through MATLAB**, E&ICT Academy course, IIT Roorkee, October 09-13, 2018 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

28. One of the Course coordinators in **Machine Learning & Its Applications**, E&ICT Academy course, IIT Roorkee, October 27-31, 2018 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

29. Represented IIT Roorkee for the **National Conference of Directors of Computer Centres in Central Universities, IITs, IIMs, IISERs, and NITs** during November 15-17, 2018 held at Banaras Hindu University, Varanasi.

30. Conducted a Workshop on **Human Behavior Analysis based on Video Analytics and Deep Learning** as a part of *15th IEEE International Conference on Advanced Video and Signal-based Surveillance (**AVSS'18**)*, 27-30 November 2018, Auckland, New Zealand (Other Workshop Coordinator: Dr. Maheshkumar H. Kolekar, IIT Patna).

31. Expert, Selection Committee member for **Department of Computer Science and Engineering, NIT Delhi**, 13th December 2018.

32. One of the Course coordinators in **Winter Course on Artificial Intelligence and Machine Learning**, E&ICT Academy course through NKN, IIT Roorkee, IIT Guwahati, IIITDM Jabalpur, NIT Patna and MNIT Jaipur with 943 participants during December 17-21, 2018 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

33. Represented IIT Roorkee in a high level meeting in the **Ministry of Home Affairs (Internal Security - I Division), New Delhi** to discuss about the high-tech products required by security agencies of the country, 26th December 2018.

34. Attended Research Advisory Committee Meeting as a member of Electronics and ICT Academy at **IIIT-DM, Jabalpur** on 14th February 2019.

35. Attended Academic Committee Meeting as a special invitee of Electronics and ICT Academy, **IIIT-DM, Jabalpur** on 14th February 2019.

36. One of the Course coordinators in **Digital Image Processing using MATLAB**, E&ICT Academy course, IIT Roorkee, February 18-22, 2019 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

37. Acted as a Single Point of Contact (SPOC) and conducted Grand Finale of **Smart India Hackathon, Software Edition** at the nodal Centre, IIT Roorkee where the event happened in 48 centres across the country during March 2-3, 2019.

38. Served as an External Expert for Thesis Proposal Seminar of a PhD student at **IIT Ropar** on 8th March 2019 (through Skype).

39. One of the Course coordinators in **Image Processing using VLSI Architectures**, E&ICT Academy course, IIT Roorkee, March 26-30, 2019 (other Course coordinators: Dr. Brajesh Kumar Kaushik and Dr. Partha Pratim Roy, IIT Roorkee).

40. Attended Purchase Committee Meeting, **IIIT Una** on 4th May 2019 (through Skype).

41. Invited as one of the experts to review the internal multidisciplinary UAY & IMPRINT projects at **IIT Delhi** on 9th May 2019.

42. Attended Research Advisory Committee meeting of a PhD student at **NIT Delhi** on 16th May 2019.

43. One of the Course coordinators in **Summer Course on Deep Learning and Applications**, E&ICT Academy course through NKN, IIT Roorkee, IIT Guwahati, IIITDM Jabalpur, NIT Patna and MNIT Jaipur with 1300 participants during May 27-31, 2019 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

44. Served as one of the committee members for the academic audit in the Department of Computer Science and Engineering at **VNIT Nagpur** on 19th July 2019.

45. One of the Course coordinators in **Deep Learning and its Applications**, E&ICT Academy course, IIT Roorkee, August 20-24, 2019 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

46. One of the Course coordinators in **Machine Learning and Data Analytics using Python**, E&ICT Academy course, IIT Roorkee, September 09-13, 2019 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

47. Expert, Selection Committee member for Department of Computer Science and Engineering, **NITTR Chandigarh**, 11th September 2019.

48. Served as one of the experts to evaluate the work done by **INSPIRE Fellows** in the broad subject area of Engineering Sciences, **Department of Science and Technology** held at Chandigarh University, Punjab, 19th September 2019.

49. Special Invitee for 6th Empowerment and Equity Opportunities for Excellence in Science (EMEQ) Task Force Committee Meeting, **SERB, New Delhi** to evaluate project proposals in Electronics and Computer Engineering disciplines, JW Marriott, Aerocity, New Delhi, September 27-28, 2019.

50. **Program Chair, Fourth International Conference on Computer Vision and Image Processing (CVIP 2019), MNIT Jaipur, September 27-29, 2019.**

51. Expert, Selection Committee member for Department of Computer Science and Engineering, **NITTR Chandigarh**, 14th October 2019.

52. Participated and delivered a talk on "Indian Academic Perspective: Big Data" in IC7: Deep dive Workshop on Low carbon Affordable Heating and Cooling of Buildings, **Department of Science and Technology** held at **IIT Delhi**, 6th November 2019.

53. Served as an External Expert in a Research Progress Committee (RPC) of a PhD student at **NIT Uttarakhand** on 19th December 2019 (through Skype).

54. One of the Course coordinators in **Winter Course on Artificial Intelligence and Machine Learning**, E&ICT Academy course through NKN, IIT Roorkee, IIITDM Jabalpur, NIT Patna and MNIT Jaipur with 1800 participants during December 23-27, 2019 (other Course coordinator: Dr. Partha Pratim Roy, IIT Roorkee).

55. Expert, Selection Committee member for DST Centre for Interdisciplinary Mathematical Sciences, Institute of Science, **Banaras Hindu University**, Varanasi, 14th January 2020.

56. Served as one of the experts in the Project Review and Steering Group (PRSG) committee to evaluate the progress of the project, implemented by C-DAC Noida and IIT Jodhpur in the **Ministry of Electronics & Information Technology (MeitY)**, New Delhi on 16th January 2020.

57. External member in the Selection board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of entry level Scientists, held on 3rd February 2020 and 6th February 2020.

58. External member in the Selection board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of Scientists D and E, held during March 3-4, 2020.

59. Course coordinator in **Online Short Course/FDP on Machine Learning and Data Analytics with Python**, E&ICT Academy course through Zoom, IIT Roorkee, April 15-22, 2020.

60. Course coordinator in **Online Short Course/FDP on Machine Learning and Data Analytics with Python**, E&ICT Academy course through Zoom, IIT Roorkee, April 23 - May 01, 2020.

61. Course coordinator in **Machine Learning and AI using Python**, Batch I, E&ICT Academy course through Zoom, IIT Roorkee, April 27 - May 06, 2020.

62. Course coordinator in **Machine Learning and Data Analytics using Python**, E&ICT Academy course through Zoom, IIT Roorkee, April 27 - May 04, 2020.

63. Course coordinator in **Machine Learning and AI using Python**, Batch II, E&ICT Academy course through Zoom, IIT Roorkee, April 27 - May 06, 2020.

64. Course coordinator in **Machine Learning and AI using Python**, E&ICT Academy course through Zoom, IIT Roorkee, May 04-13, 2020.

65. Course coordinator in **Machine Learning and its Applications**, E&ICT Academy course through Zoom, IIT Roorkee, May 04-12, 2020.

66. Course coordinator in **Machine Learning and Data Analytics using Python**, E&ICT Academy course through Zoom, IIT Roorkee, May 05-13, 2020.

67. Course coordinator in **Machine Learning and its Applications**, E&ICT Academy course through Zoom, IIT Roorkee, May 05-14, 2020.

68. Course coordinator in **Machine Learning and Data Analytics using Python**, E&ICT Academy course through Zoom, IIT Roorkee, May 06-14, 2020.

69. Served as an External Expert for Thesis Proposal Seminar of two PhD students at **IIT Ropar** during 11-12 June, 2020 (through Google Meet).

70. Served as an External Expert for State of Art Seminar of a PhD student at **IIIT Allahabad** on 16th June, 2020 (through Google Meet).

71. Course coordinator in **Machine Learning and IOT with AWS**, E&ICT Academy course through Zoom, IIT Roorkee, June 23 - July 2, 2020.

72. Course coordinator in **Machine Learning with Python**, E&ICT Academy course through Zoom, IIT Roorkee, June 25 - July 8, 2020.

73. Served as an External Expert for a Seminar of a PhD student at **IIIT Sri City, Chittoor** on 29th June, 2020 (through Google Meet).

74. Course coordinator in **Data Science using Python**, E&ICT Academy course through Zoom, IIT Roorkee, July 09 - 22, 2020.

75. Expert, Selection Committee member for **Department of Computer Science and Engineering, NIT Delhi**, 15th July 2020 (through Google meet).

76. External member in the Selection board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of Scientists F of various labs (ADA, CAIR, DEAL, DLRL, CABS, ARDE, DARE, DEBEL, DRDL and GTRE) held during August 3-5, 2020 (through Narad Video Conferencing).

77. One of the panel experts on one week online FDP **Exemplary Practices in Teaching-Learning and Evaluation of Courses in Computer Science & Information Technology**, held at IIIT Allahabad, 3-7 August, 2020 (through Google Meet).

78. Served as an External Expert for M.Tech Thesis evaluation at **IIITDM Jabalpur** on 7th August 2020 (through Zoom).

79. Course coordinator in **Data Analytics and Machine Learning using Python**, E&ICT Academy course through Microsoft Team, IIT Roorkee, August 12 - 25, 2020.

80. Course coordinator in **Data Science using Python**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, August 17 - 30, 2020.

81. Member of 7th Empowerment and Equity Opportunities for Excellence in Science (EMEQ) Task Force Committee Meeting, **SERB, New Delhi** to evaluate project proposals in Electronics and Computer Engineering disciplines, New Delhi, August 17-25, 2020 (through Lifesize Video Conference System).

82. Chairman of the first Project Review Group (PRG) meeting for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, August 24, 2020.

83. External expert of a committee for the selection of project proposals under the TIIC-TIED 2.0 Entrepreneur-in-Residence (EiR) and Minimum Viable Product (MVP)/Proof of Concept (PoC) scheme, **IIITM Gwalior** during September 14-15, 2020.

84. Participated in Vaishwik Bharatiya Vaigyanik (VAIBHAV) Summit as a panel expert in the areas of Video Analytics, ML and AI in Medical Imaging held during October 2-31, 2020.

85. Course coordinator in **Data Analytics and Machine Learning using Python**, E&ICT Academy course through Zoom, IIT Roorkee, October 05-19, 2020

86. Served as one of the experts in the Project Review and Steering Group (PRSG) committee to evaluate the progress of the project, implemented by C-DAC Noida and IIT Jodhpur in the **Ministry of Electronics & Information Technology (MeitY)**, New Delhi on 14th October 2020.

87. Course coordinator in **Data Science using Python**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, October 28 - November 10, 2020.

88. Participated as an expert in a Brain-Storming Session on the development of two new programs (1) Bachelor of Engineering Science and Technology and (2) Bachelor of Engineering Management and Technology at IIIT Allahabad on 30/10/2020.

89. Chairman of the second Project Review Group (PRG) meeting for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, 12th November, 2020.

90. Served as an External Expert for a Seminar of a PhD student at **IIIT Sri City, Chittoor** on 18th November, 2020 (through Google Meet).

91. **General Co-Chair, Fifth International Conference on Computer Vision and Image Processing (CVIP 2020), IIIT Allahabad, December 04-06, 2020.**

92. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIITDM Kancheepuram**, 11th December 2020 (through Google meet).

93. Special invitee for the senate of **IIIT Allahabad**, 12th December 2020 (through Google meet).

94. Course coordinator in **Workshop on Computer Vision and Image Processing**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, December 14-24, 2020.

95. Conducted a TEQIP course on Image Processing using VLSI Architectures in the Department of Computer Science and Engineering at **IIT Roorkee**, during 17-21 December 2020.

96. Course coordinator in **Data Science using Python**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, January 04-17, 2021.

97. Course coordinator in **Machine Learning using Python**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, Jan. 19 - Feb. 01, 2021.

98. Course coordinator in **Advanced Data Science using Python**, E&ICT Academy course through Microsoft Teams, IIT Roorkee, February 02-15, 2021.

99. Expert, Selection Committee member for **Department of Computer Science and Engineering, NITTR Chandigarh**, 17th February 2021 (through Google meet).

100. Attended a Ph D Thesis colloquium as a possible PhD thesis Examiner in the Department of Electrical Engineering at **IISC Bangalore** on 26th April 2021.

101. Course coordinator in **Machine Learning & Data Science using Python**, E&ICT Academy course through Zoom, IIT Roorkee, June 02-15, 2021.

102. Course coordinator in **Applied Data Science with Python**, E&ICT Academy course through Zoho, IIT Roorkee, June 12 - August 08 (weekend course), 2021.

103. Expert Member of Equity Opportunities for Excellence in Science (EMEQ) 5th Group Monitoring Workshop (GMW) on Engineering Sciences (Electrical, Electronics & Computer Engineering) Task Force Committee, **SERB, New Delhi** for monitoring the progress of ongoing projects, New Delhi, July 28-29, 2021 (through Microsoft Teams).

104. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), August 2021 - July 2022 batch (Recorded lectures + Weekend live lectures).

105. Acted as an External Expert for evaluation of thesis proposal to Ph.D Qualifying Examination, **NIT Puducherry**, August 10, 2021.

106. Chairman of the third Project Review Group (PRG) meeting for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, 23rd September, 2021.

107. Expert, Selection Committee member for the post of Technician in the **Department of Computer Science and Engineering, NITTR Chandigarh**, 27th September 2021 (through Google meet).

108. Under my coach, the team ***"Laila"***, comprises of Rahul Dugar, Aniket Goyal and Piyush Sethia from IIT Roorkee grabbed 62nd rank in the *44th Annual World Finals of the International Collegiate Programming Contest (ICPC)* held in **Moscow, RUSSIA**, October 1-6, 2021.

109. Course coordinator of **Online Certificate Course on Applied Data Science and Machine Learning with Python**, E&ICT Academy course through Zoom, IIT Roorkee, October 22, 2021 - January 02, 2022 (weekend course).

110. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), November 2021 - October 2022 batch (Recorded lectures + Weekend live lectures).

111. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Ranchi**, 13th November 2021 (through Google meet).

112. Expert Member of Online Initial Screening Committee (ISC), **Technology Development Board (A Statutory body of Department of Science & Technology),** to evaluate a project proposal, New Delhi, Nov 30, 2021 (through Microsoft Teams).

113. **General Co-Chair, Sixth IAPR International Conference on Computer Vision and Image Processing (CVIP 2021), IIT Ropar, December 03-05, 2021.**

114. Expert member in Data Science for the annual review for the **Prime Minister's Research Fellows, IISc Bangalore**, December 20, 2021.

115. Expert member of 8th Empowerment and Equity Opportunities for Excellence in Science (EMEQ) Task Force Committee Meeting, **SERB, New Delhi** to evaluate project proposals in Electronics and Computer Engineering disciplines, JW Marriott, Aerocity, New Delhi, December 27-28, 2021.

116. Expert member in an interview panel for Ph.D. admission in Engineering and Applied Science disciplines, **IIITM Gwalior**, January 8-9, 2022.

117. Member, 1st Research Advisory Committee meeting, **NIT Uttarakhand**, January 24, 2022.

118. Chairman of the fourth Project Review Group (PRG) meeting for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, 15th February, 2022.

119. Expert member of curriculum framing workshop of M.Tech Computer Science and Engineering in Data Science, **SVNIT, Surat**, February 17, 2022.

120. Joint- Principal Coordinator in **Two Weeks Online Training & Certificate Programme Machine Learning for Computer Vision**, E&ICT Academy course through NKN, IIT Roorkee, MNIT Jaipur, NIT Patna, NIT Warangal and PDPM IIITDM Jabalpur with 400 participants during February 21  March 4, 2022 (Principal coordinator: Prof. Aparajita Ojha, PDPM IIITDM Jabalpur).

121. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), February 2022 - January 2023 batch (Recorded lectures + Weekend live lectures).

122. Expert, Selection Committee member for **Department of Computer Science and Engineering, Rajiv Gandhi Institute of Petroleum Technology Jais, Amethi**, 29th March 2022.

123. Expert, Selection Committee member **Department of Computer Science and Engineering, IIT(ISM) Dhanbad**, 9th April 2022.

124. External member in the Selection board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Bangalore** for selection of Scientists F of various labs held during April 11-13, 2022.

125. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Ranchi**, 14th May 2022 (through Google meet).

126. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), May 2022 - April 2023 batch (Recorded lectures + Weekend live lectures).

127. Expert Member of Equity Opportunities for Excellence in Science (EMEQ) 6th Group Monitoring Workshop (GMW) on Engineering Sciences (Electrical, Electronics & Computer Engineering) Task Force Committee, **SERB, New Delhi** for monitoring the progress of ongoing projects, IIT Guwahati, June 02-03, 2022.

128. Expert member in Data Science for the annual review for the **Prime Minister's Research Fellows, IISc Bangalore**, June 14, 21 and 22, 2022.

129. Course coordinator in **Executive Certificate Program in AI Strategy for Leaders**, iHUB DivyaSampark, TIH, IIT Roorkee with The Economic Times, June 25-July 25, 2022.

130. Organizing member, **International Workshop on Multimedia Computing for Automated Urban Intelligent Systems (MCAUIS 2022)**, a virtual event in conjunction with **IEEE MIPR 2022**, August 2-4, 2022.

131. Expert, Selection Committee member for **Department of Computer Science and Engineering, Rajiv Gandhi Institute of Petroleum Technology Jais, Amethi**, 8th August 2022.

132. **General Chair, IAPR International Conference on Computer Vision and Machine Intelligence (CVMI 2022), IIIT Allahabad, Prayagraj, August 12-13, 2022.**

133. **One of the Jury members** of I-DAPT Hub Pitch Challenge, I-DAPT Hub Foundation IIT (BHU) Varanasi, August 22-23, 2022.

134. Chairman of the fifth Project Review Group (PRG) meeting for an R&D project entitled "A web browser based intelligent kernel tool for automatic detection and blocking of obscene image and video contents in real time", is being executed by IIIT Allahabad under the Cyber Crime Prevention against women and Children, **Ministry of Home Affairs, Bureau of police Research & Development**, New Delhi, 24th August, 2022.

135. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), August 2022 - July 2023 batch (Recorded lectures + Weekend live lectures).

136. Course coordinator in **Certificate Program in Data Science and Machine Learning**, iHUB DivyaSampark, TIH, IIT Roorkee with Imarticus Learning, September 2022 - February 2023.

137. Expert Member of 5th Programme Advisory Committee meeting of Core Research Grant Exponential Technologies, **SERB, New Delhi** to evaluate project proposals, IIT Delhi, September 22-23, 2022.

138. Expert, JRF Project Selection Committee member in the **Department of Mathematics, NIT Bhopal**, 4th October 2022 (through Google meet).

139. Served as an External Expert for Thesis Proposal Seminar of a PhD student at **IIT Ropar** on 28th October 2022.

140. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Kota, Rajasthan**, 1st November 2022.

141. **General Co-Chair, Seventh IAPR International Conference on Computer Vision and Image Processing (CVIP 2022), NIT Nagpur, November 04-06, 2022.**

142. Expert member of 9th Empowerment and Equity Opportunities for Excellence in Science (EMEQ) Task Force Committee Meeting, **SERB, New Delhi** to evaluate project proposals in Electronics and Computer Engineering disciplines, Lemon Tree Premier Hotel, Aerocity, New Delhi, November 17-18, 2022.

143. Delivered a talk on Research methodology nuances to the research scholars in the **Department of Computer Science and Engineering, MNIT Jaipur** on 25th November 2022.

144. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), November 2022 - October 2023 batch (Recorded lectures + Weekend live lectures).

145. One of the expert members of the **National Board of Accreditation (NBA) team** to evaluate the Computer Science and Engineering undergraduate course in a college at Mysuru between 2-6, December 2022.

146. Course coordinator in **Certificate Program in Data Science and Machine Learning**, iHUB DivyaSampark, TIH, IIT Roorkee with Imarticus Learning, December 2022 - August 2023.

147. Served as an RDC external member for a PhD student at **NIT Bhopal** on 19th December 2022.

148. Expert member of a Screening committee of State University Research Excellence (SERB-SURE) scheme for the evaluation of new proposals **SERB, New Delhi** in Electronics, Communication and Computer Engineering disciplines, IIT Delhi, January 30-31, 2023.

149. External member in the Selection Board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of entry-level Scientists, held during 02-03. 09-11 and 23-25, February 2023.

150. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), February 2023 - January 2024 batch (Recorded lectures + Weekend live lectures).

151. Expert, Selection Committee member for **Department of Computer Science and Engineering, Rajiv Gandhi Institute of Petroleum Technology Jais, Amethi**, 10th March 2023.

152. One of the expert members of the **National Board of Accreditation (NBA) team** to evaluate the Computer Science and Engineering undergraduate course in one of the top Engineering Universities at Chennai between 30th March - 2nd April 2023.

153. Special Invitee for 2nd Selection Committee meeting of SERB International Research Experience (SERB-SIRE) **SERB, New Delhi** to evaluate project proposals in Electronics and Computer Engineering disciplines, North-Eastern Hill University, Shillong, Meghalaya, April 27-28, 2023.

154. Reviewer, the Faculty Research Scheme (FRS), seed grant in the Department of Mathematics & Computing at **IIT (ISM) Dhanbad** on May 01, 2023.

155. Expert Member of Equity Opportunities for Excellence in Science (EMEQ) 7th Group Monitoring Workshop (GMW) on Engineering Sciences (Electrical, Electronics & Computer Engineering) Task Force Committee, **SERB, New Delhi** for monitoring the progress of ongoing projects, University of Hyderabad, May 12-13, 2023.

156. One of the expert members of the **National Board of Accreditation (NBA) team** to evaluate the Information Technology undergraduate course in one of the Engineering Colleges at Surampalem, Andhra Pradesh between May 26-28, 2023.

157. One of the expert members for the best project awards in the categories of B.Tech, Integrated and M.Tech at **IIITDM Kancheepuram** on May 29, 2023.

158. Expert, Selection Committee member for the **Department of Computer Science and Engineering, NIT Mizoram**, May 31, 2023.

159. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), May 2023 - April 2024 batch (Recorded lectures + Weekend live lectures).

160. Served as an External Expert for the Research Proposal Colloquium of a PhD student at **IIIT Allahabad** on June 7th, 2023.

161. Served as an External Expert for M.Tech Thesis Evaluation at **IIT Jammu** on June 20th, 2023.

162. Served as an External Member in the Selection board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi**. The purpose was to select Scientists E from various labs including (CFEES, DEAL, ADRDE, DGRE, DL, DRDE, HQ-ADV (CYBER), INMAS, JCB, IRDE, ISSA and SAG). The selection process took place during July 10-13, 2023.

163. Course coordinator in **Certificate Program in Data Science and Machine Learning**, iHUB DivyaSampark, TIH, IIT Roorkee with Imarticus Learning, July 2023 - March 2024.

164. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Kota, Rajasthan**, 7th August 2023.

165. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), August 2023 - July 2024 batch (Recorded lectures + Weekend live lectures).

166. One of the expert members of the **National Board of Accreditation (NBA) team** to evaluate the Computer Science and Engineering postgraduate course in a college at Hyderabad between 25-27, August 2023.

167. Governor's Nominee in the Selection Committee for **Department of Computer Science and Engineering, Veer Madho Singh Bhandari Uttarakhand Technical University**, 28th August 2023.

168. Organizing member, Second International Workshop on Multimedia Computing for Automated Urban Intelligent Systems (MCAUIS 2023), in conjunction with IEEE MIPR 2023, August 30 September 1, 2023 Singapore, SINGAPORE.

169. Expert, Selection Committee member for the **Department of Mathematics and Computing, NITK Surathkal**, September 13-15, 2023.

170. Expert, Selection Committee member for the **Department of Computer Science and Engineering, NIT Silchar**, September 27, 2023.

171. Served as an External Expert Member in the Selection Committee for the post of Scientists in **CSIR Fourth Paradigm Institute, Bengaluru** during October 27-31, 2023.

172. **General Co-Chair, Eighth IAPR International Conference on Computer Vision and Image Processing (CVIP 2023), IIT Jammu, November 03-05, 2023.**

173. **Expert, Peer Review Committee**, for a task project entitled "Development of Standardized Parameters of a Verbal and Non-Verbal behaviour having Strategic Implications (SPOVNOVB) in Defence Institute of Psychological Research (DIPR), **Defence Research & Development Organisation (DRDO), Delhi** on 9th November 2023.

174. One of the course coordinators of **Advanced Certificate Program in Full Stack Software Development**, Great Learning and E&ICT Academy IIT Roorkee (through Zoom), November 2023 - October 2024 batch (Recorded lectures + Weekend live lectures).

175. Served as an External Expert Member in the Selection Committee for the post of Senior Scientists in **CSIR Fourth Paradigm Institute, Bengaluru** during November 21-22, 2023.

176. Expert, Selection Committee member for the **Department of Computer Science and Engineering, IIT Tirupati**, December 12, 2023.

177. Served as an External Expert for the Research Proposal Colloquium of a PhD student at **IIIT Allahabad**, December 12, 2023.

178. **Session Chair, 14th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP 2023), IIT Ropar, December 15-17, 2023.**

179. Served as an External Expert for PhD student's JRF to SRF conversion at **IIT Jammu** on 15th January 2024.

180. External member in the Selection Board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of entry-level Scientists, held on 16th January 2024.

181. Served as an External Expert for PhD student's Comprehensive Viva Voce at **NIT Jalandhar** on 17th January 2024.

182. External member in the Selection Board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of Lateral entry Scientists (Project Scientists C and D), held during 12-16 February 2024.

183. One of the expert members of the **National Board of Accreditation (NBA) team** to evaluate the Computer Science and Engineering undergraduate course in one of the Engineering colleges at Bapatla, Andhra Pradesh between 23-25 February 2024.

184. Expert Member of the Fast Track Review Panel tasked with evaluating **SPARC-Phase 2 proposals under the Government of India Initiative**, focusing on the themes of Electronics, Communication, and Computer Science Engineering, held at **IIT Kharagpur** on February 26, 2024.

185. Subject Expert, **Curriculum Development Workshop** for B.Tech Mathematics and Computing in the Department of Mathematics, **MNIT Jaipur**, 01-02 March 2024.

186. Expert, Selection Committee member for **Department of Computer Science and Engineering, Rajiv Gandhi Institute of Petroleum Technology Jais, Amethi**, 11th March 2024.

187. Expert, Shortlisting Committee member for Professor Applications in the **Department of Computer Science and Engineering, IIT Ropar**, 23rd March 2024.

188. One of the expert members of **All India Council For Technical Education (AICTE) Online / Virtual Re Scrutiny Committee** for processing applications of the three Technical Institutions in Tamilnadu under Chapter II cases as per Approval Process Handbook (APH 2024-25), held on 30th March 2024.

189. Under my coach, the team ***"Kaala Khatta"***, comprises of Dinesh Goyal, Yatin Khanna, and Ajit Pant from IIT Roorkee grabbed 95th rank in the *46th Annual World Finals of the International Collegiate Programming Contest (ICPC)* held in **Luxor, Egypt**, April 14-19, 2024.

190. Expert, M.Tech Thesis Evaluation in the **Department of Electronics and Electrical Communication Engineering, IIT Kharagpur**, 29th April 2024.

191. Expert Member, Doctoral Committee meeting of the Ph.D. Scholar in the **School of Computing, Indian Institute of Information Technology Una**, 17th May 2024.

192. Served as an External Expert for the Research Progress Colloquium of a PhD student at **IIIT Allahabad** on 21st May, 2024.

193. Expert, Selection Committee member for the **Department of Computer Science and Engineering, NIT Mizoram**, June 18, 2024.

194. Expert, Selection Committee member **Department of Computer Science and Engineering, IIT(ISM) Dhanbad**, 9th July 2024.

195. Subject Expert, **Curriculum Development Workshop** for B.Tech Artificial Intelligence and Data Engineering and B.Tech Computer Science and Engineering, **IIIT Kota**, 11th July 2024.

196. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Kota, Rajasthan**, 15th July 2024.

197. Expert, Selection Committee member for **Department of Artificial Intelligence and Data Engineering, IIIT Kota, Rajasthan**, 15th July 2024.

198. Expert, Selection Committee member for **Department of Mathematics, IIIT Kota, Rajasthan**, 16th July 2024.

199. Governor's Nominee in the Selection Committee for **Department of Computer Science and Engineering, Veer Madho Singh Bhandari Uttarakhand Technical University**, 1st August 2024.

200. Expert, Selection Committee member for the selection of Faculty Fellows and Chair Professors at **iHub Anubhuti, IIIT Delhi**, 23rd August 2024.

201. Served as an External Expert for the conversion of JRF to SRF of a PhD student at **NIT Jalandhar** on 30th September 2024.

202. **General Co-Chair, Ninth IAPR International Conference on Computer Vision and Image Processing (CVIP 2023), IIITDM Kancheepuram, December 19-21, 2024.**

203. Served as an External Expert for the Research Progress Colloquium of a PhD student at **IIIT Allahabad** on 30th December, 2024.

204. Special Invitee for the First Prime Minister Early Career Research Grant, **ANRF, New Delhi** to evaluate project proposals in disciplines of Computer Engineering, Novotel, Aerocity, New Delhi, January 28-29, 2025.

205. Expert member of the 1st Inclusivity Research Grant (IRG) Task Force Committee Meeting, **ANRF, New Delhi** to evaluate project proposals in Electronics and Computer Engineering Disciplines, Hotel Pullman, Aerocity, New Delhi, February 06-07, 2025.

206. Expert Committee Member, the 1st Project Review & Steering Group (PRSG) Meeting for the project titled "Skill Development of Youth in Upper Hill Areas in Digital Technologies in Tier-II & Tier-III Cities of Uttarakhand (ITDA)", Ministry of Electronics and Information Technology (MeitY), 17th February, 2025.

207. Expert, Selection Committee member **Department of Computer Science and Engineering, NIT Jalandhar**, 25-27 April, 2025.

208. Expert, Member of the Selection Committee for the Department of Computer Science and Engineering, **NITTR Chandigarh**, 28th April 2025.

209. Expert, M.Tech Thesis Evaluation in the **Department of Electronics and Electrical Communication Engineering, IIT Kharagpur**, 5th May 2025.

210. Expert, Selection Committee member for the **Department of Computer Science and Engineering, NIT Mizoram**, June 12, 2025.

211. Expert Committee Member, the 2nd Project Review & Steering Group (PRSG) Meeting for the project titled "Skill Development of Youth in Upper Hill Areas in Digital Technologies in Tier-II & Tier-III Cities of Uttarakhand (ITDA)", Ministry of Electronics and Information Technology (MeitY), 15th July, 2025.

212. Expert, Selection Committee member for the **Department of Mathematics and Computing, IIIT Raichur**, July 18, 2025.

213. Served as an External Expert for the Research Progress Colloquium of a PhD student at **IIIT Allahabad** on 24th July, 2025.

214. Served as an External Expert for the Doctoral Committee of a PhD student in the Department of Computer Science and Engineering at **IIITDM Kurnool** on 1st August, 2025.

215. External member in the Selection Board of Recruitment & Assessment Centre of **Defence Research & Development Organisation (DRDO), Delhi** for selection of Lateral entry Scientists (Project Scientists D), held during 12th August, 2025.

216. Expert Committee member of the 1st National Post Doctoral Fellowship (NPDF) Meeting, **ANRF, New Delhi** to evaluate proposals in Electronics and Computer Engineering Disciplines, Jamia Hamdard University, New Delhi, August 18-19, 2025.

217. Expert Committee member of the 1st National Post Doctoral Fellowship (NPDF) Meeting, **ANRF, New Delhi** to evaluate proposals in Mathematical Sciences Disciplines, Jamia Hamdard University, New Delhi, August 21-22, 2025.

218. External Evaluation Committee member under the **IIT JammuDAAD Bilateral Exchange of Academics Programme** to evaluate IIT JammuDAAD Bilateral Exchange Applications, **IIT Jammu** on 6th September, 2025.

219. Expert, Selection Committee member **Department of Mathematics, IIT Roorkee**, 09-10 September, 2025.

220. Expert, Selection Committee member for **Department of Computer Science and Engineering, IIIT Kota, Rajasthan**, 4th October 2025.

221. Expert, Selection Committee member for **Department of Artificial Intelligence and Data Engineering, IIIT Kota, Rajasthan**, 4th October 2025.

## ADMINISTRATIVE RESPONSIBILITIES (DEPARTMENT AND INSTITUTE)

1. Deputy Superintend of Examinations, Nov. 2004.
2. Department Research Committee (DRC) Member, 2006-08, 2012-13 (Dept. of Mathematics), 2013-15 (Dept. of Computer Science and Engineering)
3. Academic Programme Committee (DRC (APC), MCA Programme) Member, 2006 to 2015.
4. Secretary, Department Faculty Board (DFB), January 2007 - June 2009.
5. Course Coordinator, MCA II year, 2007-08, 2009-10, 2010-11 and 2011-12.
6. Course Coordinator, MCA I year, 2008-09, 2011-12, 2012-13 and 2013-14.
7. Department Academic Committee Member (Formerly Under Graduate Committee), 2008-10 and 2010-12.
8. Deputy Coordinator, Mathematics I (MA 101), B. Tech, 2007-08, 2009-10.
9. Coordinator, Summer Term Course Mathematics I (MA 101), B. Tech, 2007-08.
10. O.C. Garden, Dept. of Mathematics, IIT Roorkee, July 2009 to April 2012.
11. Faculty Advisor, Cognizance 2010 and 2011 (Technical Festival), Dept. of Mathematics, IIT Roorkee.
12. Joint Secretary, IEEE Uttrakhand Subsection, July 2010 to March 2013.
13. Member, Board of SRIC, IIT Roorkee, March 2011 to December 2016.
14. Chairman, Department Website Committee, IIT Roorkee, March 2011 to September 2013.
15. Coordinator, Summer Term Course Computer Systems and Programming (EC-101 A), B.Tech 2010-11 and 2011-12.
16. Coordinator, MCA III year, Industrial Project, IIT Roorkee, 2011-12.

17. Department FIST, DST committee member, IIT Roorkee, 2011-12
18. O.C. Training and Placement, Dept. of Mathematics, IIT Roorkee, April 2012 to Sep 2013.
19. Department Anti Ragging Committee member, IIT Roorkee, 2012-13.
20. Presiding Officer, SAC Elections, Azad Bhawan, IIT Roorkee, 2012-13.
21. Institute Strategy Committee member, IIT Roorkee, January 2013 to December 2016.
22. Course Coordinator, M.Sc Final year, IIT Roorkee, 2012-13.
23. Secretary, IEEE Uttrakhand Subsection, March 2013 to January 2018.
24. Course Coordinator, MCA III year, 2012-13
25. Institute Research Committee member, Department of Computer Science and Engineering, October 2013 to October 2015.
26. Faculty Coordinator, CodeChef, IIT Roorkee Chapter.
27. Faculty Coordinator, B. Tech II Year, 2014-15.
28. Institute Panel of Chairpersons for Screening and Selection committees for the recruitment of Project/Research staff under Sponsored Research and Consultancy Projects, January 2015 to December 2015.
29. **Head, Institute Computer Centre, IIT Roorkee, February 2015 to March 2020**
30. Chairman, Department Purchase Committee, February 2015.
31. O.C. Seminar, Dept. of Computer Science and Engineering, IIT Roorkee, February 2015 to January 2017.
32. **Faculty In-charge, Communications, IIT Roorkee, May 2016 to January 2022**
33. Chairman, Department Research Committee, October 2016 to October 2018.
34. O.C. Research Scholar, Department Research Committee, November 2016 to May 2018.
35. Chairman, School Academic Program Committee (ScAPC), Mehta Family School of Data Science and Artificial Intelligence, IIT Roorkee, July 2021 to February 2022.
36. Member, Advisory Committee (AC) of Continuing Education Centre, IIT Roorkee, Nov 2021 to Nov 2023.
37. Convener, Faculty Search Committee (FSC), Department of Computer Science and Engineering, IIT Roorkee, January 2022 to December 2022.
38. Chairman, Department Research Committee, January 2023 to January 2025.
39. **Professor In-charge, Greater Noida Extension Centre (GNEC) Campus, IIT Roorkee, 1st May 2023 to till date**.
40. **Senate Member, IIIT Kota** for a two-year term from February 2024.
41. **Head, Department of Computer Science and Engineering, IIT Roorkee, July 2024 to till date**

## NAMES OF REFEREES

- Prof. Kidiyo KPALMA, Professor at EII / IETR-INSA - UMR CNRS 6164, Charg de mission for International Affairs - African Area, Dpartement Image/IETR/UMR 6164, Institut National Des

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- Prof. C. Chandra Sekhar, Former Head, Department of Computer Science and Engineering, Indian Institute of Technology Madras, Chennai - 600 036, INDIA, email: chandra@cse.iitm.ac.in