

Dr. Shirshendu Layek

Assistant Professor
Data Science & Artificial Intelligence
Indian Institute of Information Technology Dharwad

+91 8789 355 850
shirshendu@iiitdwd.ac.in
Dharwad, Karnataka

PROFESSIONAL INTENT

With a deep passion for innovation and sustainability, I am dedicated to leveraging cutting-edge research and technology to positively impact society and industry. A hard working and honest individual, always willing to learn new skills.

EDUCATION

PhD in Structural Engineering & Computer Vision, **IIT (ISM) Dhanbad**

M.Tech in Geomatics, **IIT (ISM) Dhanbad**

B.Tech in Information Technology, **HIT, Haldia**

PROFESSIONAL EXPERIENCE

Assistant Professor, Data Science & Artificial Intelligence, IIIT Dharwad

2024 – Current

Research Areas: AI, Machine Learning, Deep Learning, Computer Vision

Assistant Professor, Computer Science & Engineering, UPES Dehradun

2023 – 2024

Research Areas: AI, Machine Learning, Deep Learning, Computer Vision

Assistant Professor, Computer Science & Engineering, DIT University, Dehradun

2022 – 2023

Research Areas: AI, Machine Learning, Deep Learning, Computer Vision

CORE COMPETENCIES

- | | |
|-------------------------------|----------------------------|
| ✧ Artificial Intelligence | ✧ Machine Learning |
| ✧ Deep Learning | ✧ Computer Vision |
| ✧ GIS & Geomatics | ✧ DevOps |
| ✧ Python | ✧ Java |
| ✧ C Programming Language | ✧ Data Science & Analytics |
| ✧ Database Management Systems | ✧ Computer Networking |

PROJECTS & CONSULTANCIES

AICTE QIP PG Cyber Physical Systems (CPS) Certification Course

- ✧ Role: Program Coordinator
- ✧ Funding: ₹20 Lakhs
- ✧ Timeline: June 2026

ANRF Workshop titled “Applied AI & Computer Vision for Safety and Sustainability”

- ✧ Role: Program Coordinator
- ✧ Funding: ₹5 Lakhs
- ✧ Timeline: August 2026

PUBLICATIONS & RESEARCH

Journal Papers (SCI/SCIE Indexed)

- ✧ Layek, S., Bhushan, M., Mall, S. et al. Precision forecasting of cloudbursts with CNNs and GAF for real-time disaster response. *Model. Earth Syst. Environ.* 12, 184 (2026)
<https://doi.org/10.1007/s40808-026-02826-4>,
- ✧ Parmar, V., Layek, S., Bhushan, M. *et al.* Advanced deep learning approach for the fault severity classification of rolling-element bearings. *Sci Rep* **15**, 34353 (2025)
<https://doi.org/10.1038/s41598-025-16895-5>

- ✧ Layek, Shirshendu, Villuri, Vasanta Govind Kumar, Koner, Radhakanta, Chand, Kapoor, *Rainfall & Seismological Dump Slope Stability Analysis on Active Mine Waste Dump Slope with UAV, Advances in Civil Engineering*, 2022, 5858400, 15 pages, 2022
<https://doi.org/10.1155/2022/5858400>.

Book Chapter (SCIE Indexed)

- ✧ Layek, S., Singh, R.K., Villuri, V.G.K., Koner, R., Soni, A., Khare, R. (2020). 3D Reconstruction: An Emerging Prospect for Surveying. In: Ghosh, J., da Silva, I. (eds) Applications of Geomatics in Civil Engineering. Lecture Notes in Civil Engineering, vol 33. Springer, Singapore.
https://doi.org/10.1007/978-981-13-7067-0_5

Book Chapters (Scopus Indexed)

- ✧ Gupta, V., Layek, S., and Bhushan, M. "Impact of Social Responsibility Indicators on the Technical Efficiency of Banks Using Machine Learning." Ethical Quandaries in Business Practices. IGI Global (2024).
<https://doi.org/10.4018/979-8-3693-3948-0.ch004>
- ✧ Bhushan, M., et al. "Autonomous Navigation of Rovers Using ML and DL Techniques." AI-Enabled Social Robotics in Human Care Services. IGI Global (2023).
<http://doi.org/10.4018/978-1-6684-8171-4.ch008>

Internation Conferences (Scopus Indexed)

- ✧ Dawar, Ishaan, et al. "Forest fire detection using deep learning techniques." 2023 2nd International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies (ViTECoN). IEEE, 2023.
<http://doi.org/10.1109/ViTECoN58111.2023.10157262>
- ✧ Rana, Meghavi, et al. "Risk analysis for cryptocurrency: challenges and future scope." 2023 3rd International Conference on Emerging Smart Technologies and Applications (eSmarTA). IEEE, 2023.
<http://doi.org/10.1109/eSmarTA59349.2023.10293308>
- ✧ Mondal, Biswajit, et al. "Crop disease prediction using machine learning and deep learning: An exploratory study." 2023 International Conference on Sustainable Computing and Smart Systems (ICSCSS). IEEE, 2023.

<http://doi.org/10.1109/ICSCSS57650.2023.10169612>

- ✧ Dawar, Ishaan, et al. "Text categorization using supervised machine learning techniques." 2023 Sixth International Conference of Women in Data Science at Prince Sultan University (WiDS PSU). IEEE, 2023. <http://doi.org/10.1109/WiDS-PSU57071.2023.00046>

PATENTS

- ✧ "Assistance Device for Visually Impaired Users", Application no: 202311019740, Indian Patent.
- ✧ "A System for cloudburst event forecasting using Convolutional Neural Network (CNN) and Gramian Angular Field (GAF)", Application no: 202311037799, Indian Patent.

ADMINISTRATIVE ROLES

IIIT Dharwad

2026-27 Academic Year

- ✧ Institute: ICC Member, Social Media Committee Member, Department of AIC CSE Course Coordinator, 8th Convocation Transport, Sports Committee Member
- ✧ Department: Timetable Coordinator, DUGC Member, DPGC Member

IIIT Dharwad

2025-26 Academic Year

- ✧ Institute: ICC Member, Sports Committee Member, 7th Convocation Transport Committee
- ✧ Department: TimeTable Coordinator, DUGC Member, DPGC Member, Mini Project Coordinator, Major Project Coordinator

IIIT Dharwad

2024-25 Academic Year

- ✧ Institute: Sports Committee Member, 6th Convocation Food Committee
- ✧ Department: Timetable Coordinator, DUGC Member, DPGC Member, Mini Project Coordinator, Major Project Coordinator

UPES Dehradun

Academic Year 2023-24

- ✧ Minor Project Coordinator
- ✧ B.Tech CCVT Program Coordinator
- ✧ Subject Coordinator of DevOps

DIT University, Dehradun

Academic Year 2022-23

- ✧ B.,Tech CSE Final year Coordinator

ACHIEVEMENTS & RECOGNITION

- ✧ Jury Member – Smart India Hackathon 2025, IIIT Dharwad
- ✧ Sponsorship Chair – ICDDS Conference 2025, IIIT Dharwad
- ✧ MHRD Scholarship for M.Tech at IIT ISM Dhanbad
- ✧ MHRD Scholarship for PhD at IIT ISM Dhanbad
- ✧ GATE Qualification 2016 & 2014 (Computer Science & Engineering)
- ✧ Project Internship at IIRS-ISRO, Dehradun (Big Data & Hadoop API)
- ✧ Keynote speaker - Building AI & ML Applications using Python (ANRF Workshop) Feb 2026
- ✧ Resource Person for Empowering Educators through Cutting Edge Technologies in Software Development at BEC Bagalkot, India
- ✧ Deep Learning Question Paper Preparation For Lendi Institute of Engineering and Technology
- ✧ keynote address Speaker for World AI Appreciation Day, hosted by @Centurion University of Technology and Management, Vizag India
- ✧ Worked on developing HPC based solution for ISRO for Managing GISAT Satellite Data
- ✧ Experience of 1 year internship at IIRS-ISRO Dehradun

TRAINING & CERTIFICATIONS

- ✧ Ph.D. at IIT (ISM), Dhanbad

Computer Vision, Machine Learning, 3D Modelling, GIS, Numerical Analysis, UAV Surveying, Geotechnical Analysis

✧ Project Internship at IIRS-ISRO, Dehradun

Big Data Analytics, Hadoop API, Satellite Image Archiving, Parallel Processing Maintaining, Hadoop-based Clusters

✧ IIRS-ISRO, Outreach e-Learning Education Program

GIS Technology, Geo-referencing, Geospatial Data, Map-Generation. Band-Insections, Classifications

✧ Teaching Experience at IIT(ISM), Dhanbad for Graduates & Masters

Python, Machine Learning, Data Science with R, Surveying

GATE QUALIFICATION

✧ 2014 in Computer Science and Engineering

✧ 2016 in Computer Science and Engineering

COURSES INSTRUCTED

✧ Artificial Intelligence

✧ Database Management Systems

✧ Machine Learning

✧ Computer Vision

✧ Deep Learning

✧ Exploratory Data Analytics

✧ Computer Communication Networks

✧ 3D Vision & Geometry

✧ DevOps

✧ Data Science Laboratory

✧ Linux for Engineers

✧ MLOps

LINKS

Website: <https://sites.google.com/view/shirshendulayek>

LinkedIn: <https://www.linkedin.com/in/dr-shirshendu-layek-68151076/>

GitHub: <https://github.com/shirshendulayek>

Google Scholar: https://scholar.google.com/citations?user=t8h-T_4AAAAJ&hl=en

Orchid: <https://orcid.org/0000-0001-6426-8813>

PROFESSIONAL REFERENCES

Prof. VGK Villuri, Associate Professor, IIT (ISM) Dhanbad
vgkvilluri@iitism.ac.in

Prof. R. Koner, Associate Professor, IIT (ISM) Dhanbad
rkoner@iitism.ac.in