

Dr. Dinesh Kumar Sah

Ph.D from Computer Science and Engineering – Indian Institute of Technology
(Indian School of Mines) Dhanbad

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I am seeking an opportunity to work on significant research in an organization that offers professional development, exciting experiences, and personal growth. I have experience in coding according to the criteria defined for each given technology, and I am very hard working, and patient person which helps me to adapt to any environment.

Thesis title

Cross layer and machine learning-based algorithms for wireless sensor networks and Internet of Things (IoT).

Research Interests

Wireless Sensor Networks, Internet of Things, 5G connectivity, MQTT, TSNs and Data management on Edge using different Machine learning methodology.

Summary of Publications

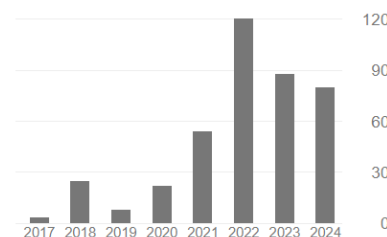
- #Web of of Journal Articles: **14**
- #of Conference Article: **09**
- #of Under review: **03**
- #of Book Chapters: **04**

Source: Google Scholar

(On March 14, 2025)

Cited by

	All	Since 2020
Citations	438	397
h-index	12	11
i10-index	13	11



Education

Degree Programs

- Doctor of Philosophy** **Indian Institute of Technology (ISM), Dhanbad**
Computer Science and Engineering *Aug 2016– Sep 2022*
Working on Cross layer design and Machine learning-based algorithms for Wireless Sensor Networks as well as Internet of Things (IoT)
Supervisors: Prof. Tarachand Amgoth
- Master of Technology** **National Institute of Technology**
CGPA: 7.79/10, First Class with Distinction, Computer Science and Engineering *Silchar, 2013–2015*
Light-path Routing and Wavelength Assignment in Translucent Optical Network through ILP Technique
- Bachelor of Technology** **OIMT, RGPV Bhopal(MP)**
Performance: 72/100, First Class, Computer Science and Engineering *Aug 2008–Apr 2012*
I Learned core subjects and developed several web applications.

Schooling Education

- 12th** **St. Joseph Senior secondary school**
Performance: 66/100, First Class *Patna, 2004–2006*
- 10th** **H.E School, Jaynagar (Bihar)**
Performance: 64/100, First Class *2004*

Certifications

- Graduate Aptitude Test in Engineering **Gate** qualified in computer science in 2013 and 2016.
- University Grants Commission National Eligibility Test (UGC-NET) is Eligibility for Assistant Professorship in India, and i have qualified in computer science in year 2016
- Two-Week FDP on Sensor Networks and IoTs, **Organizing committee** (ICPS Division of DST, India)
- Faculty Development Center sponsored FDP on Wireless Sensor Networks

Independent ongoing Research Projects

- Design And Development of indigenous system for monitoring rainfall (ISM-R)
- Zero-touch Resource Provisioning for Internet of Things
- Smartcamp: A Social Relationship Based Knowledge Sharing Heterogeneous Wireless Environments for Behavior Identification in Ambient Intelligence Campus.
- A Survey on Industrial Internet of the Things: Enabling Technology Prospective
- Solar-Based street lighting system accepted in **MSME** with Rs. 1.5 Million funding under supervision of Prof. A. Tarachand

Thesis supervision

- Mobile sensor data fusion for healthcare 5.0 Application.
- Full stack hardware/software infrastructure for fault prediction framework using sensor data fusion for industry 4.0.
- Mobile object Motion Planning with Machine Learning techniques for Autonomous Navigation.

Work Experience

- **Post-doctoral fellow** **Mälardalen University, Sweden**
Embedded Systems Group, *June-23 Contd...*
The main responsibility is to perform research on Federated Learning over the Edge Devices and connectivity using 5G for Industrial Internet of Things
- **Assistant Professor** **Institute of Technical Education and Research (SOA), Bhubaneswar**
Computer Science and Engineering, *April-22 to June-23*
Main Lecturer and Course Responsible for: **Machine learning** , System programming, **Networking with CCNA** .
The main responsibility is to teach and evaluate the students through assignments and exams.
- **Research Fellow** **Indian Institute of Technology (ISM)**
Computer Science and Engineering *Aug 2016–March 2022*
Work towards the Ph.D as well as, *teaching assistant* and project proposals writing in WSNs and IoTs domain
Responsibility was back-end development of application using Python, C, *OMNet* + +
- **Lecturer/Assistant Professor** **National institute of technology, Puducherry**
Computer Science and Engineering *June-16 to Aug-2016*
Main Lecturer and Course Responsible for: Programming in C, System Programming
The main responsibility is to teach and evaluate the students through assignments and exams.
- **Lecturer** **National institute of technology, Srinagar**
Computer Science and Engineering *Jan-16 to May 2016*
Main Lecturer and Course Responsible for: Operating Systems, compiler design, Computer Networks.
The main responsibility is to teach and evaluate the students through assignments and exams.
- **Assistant Professor** **J.B institute of technology, Hyderabad**
Computer Science and Engineering *Sept-15 to Dec-2015*
Main Lecturer and Course Responsible for: Discrete mathematics.
The main responsibility is to teach and evaluate the students through assignments and exams.

Publications

Journals

1. Dinesh kumar sah, Maryam Vahabi, Hossein Fotouhi
Federated Learning on Edge Devices for Industrial Internet of Things
Sustainable Computing: Informatics and Systems, Elsevier, Volume 46, 2025. [IF: 3.8]
2. Dinesh Kumar Sah, Tarachand Amgoth
Parametric survey on cross-layer designs for wireless sensor networks
Computer Science Review, Elsevier, vol. 27, pp. 112-134, February 2018. [IF: 13.3]
3. Dinesh Kumar Sah, Tarachand Amgoth, Korhan Cengiz et.al
3D Localization and Error Minimization in Underwater Sensor Networks, *ACM Transactions on Sensor Networks March 2021., [IF: 3.9]*
4. Dinesh Kumar Sah, Tarachand Amgoth, Korhan Cengiz et.al,
Energy efficient medium access control protocol for data collection in wireless sensor network: A Q-learning approach, *Sustainable Energy Technologies and Assessments, October 2021 [IF: 7.1]*
5. Dinesh Kumar Sah, Korhan Cengiz, Tarachand Amgoth et.al
EDGF: Empirical dataset generation framework for wireless network networks, *Computer communication, August 2021 [IF: 4.5]*
6. Debendra Muduli, Dinesh Kumar Sah ✉ et.al
Retinal Imaging based Glaucoma Detection using Modified Pelican Optimization based Extreme Learning Machine, *Scientific Reports, Nature Publishing Group UK London, In-Press. [IF: 3.8]*
7. Dinesh Kumar Sah, Korhan Cengiz et.al,
TDMA Policy to Optimize Resource Utilization in Wireless Sensor Networks Using Reinforcement Learning for Ambient environment, *Computers Communication, November 2022 [IF: 4.5]*
8. Dinesh Kumar Sah, Korhan Cengiz et.al,
Early Alert of sleep deprivation Using Mobile Vibrometer Data Analytics In Healthcare Systems, *Computers and Electrical Engineering, Feb 2022 [IF: 4.0]*
9. Dinesh Kumar Sah, Korhan Cengiz et.al
Load-balance Scheduling for Intelligent Sensors Deployment in Industrial Internet of Things, *Cluster Computing, Springer, June 2021. [IF: 4.4]*
10. Korhan Cengiz, Rani kumari, Dinesh Kumar Sah ✉ et.al,
SOHCL-RDT: A self-organized hybrid cross-layer design for reliable data transmission in wireless network, *Physical Communication [IF: 2.2]*
11. Rani Kumari, Dinesh Kumar Sah ✉ et.al,
Acoustic signal-based indigenous real-time rainfall monitoring system for sustainable environment, *Sustainable Energy Technologies and Assessments, October 2021 [IF: 7.1]*
12. Rani Kumari, Dinesh Kumar Sah ✉ et.al
Advancing Medical Recommendations with Federated Learning on Decentralized Data: A Roadmap for Implementation, *IEEE Transactions on Consumer Electronics March 2023., [IF: 4.414]*
13. Rani Kumari, Dinesh Kumar Sah ✉ et.al
Automatic graph construction and Exploring different types of LSTMs for Asian Hindi languages for Medical review Sentiment Analysis, *ACM Transactions on Asian and Low-Resource Language Information Processing Sep 2023., [IF: 1.8]*
14. Chaya Shivalingagowda, Dr. P.V.Y Jayasree, Dinesh.Kumar. Sah ✉
Efficient Energy and Position Aware Routing Protocol for Wireless Sensor Networks
KSII Transactions on Internet and Information Systems, vol. 14, pp-1929-1950, May 31, 2020. [IF: 1.2]

Under Review

1. A Comprehensive Survey on Test-beds for Low-Latency IIoT: Evaluating 5G and Wireless Networks ([Under review in IEEE transaction on Consumer Electronics, Impact factor= 5.48,](#))
2. Energy-Efficient Task Allocation for IIoT Deep Learning Applications: An Embedded Edge Clusters Solution ([Under review in IEEE Internet of Things Journal, Impact factor= 10.6,](#))
3. Lightweight Edge-AI for Smart Consumer Devices: A Case Study on Yawning Detection ([Under review in IEEE](#)

transaction on Consumer Electronics, Impact factor= 5.48,)

4. Distributed Edge cluster for Real-Time deep learning and AI Applications (Work in progress)
Brief Description: Developing and optimizing a distributed edge computing system for real-time deep learning using TensorFlow Lite on a Master-Worker architecture. The system offloads computation to multiple worker nodes over 5G, Wi-Fi and Ethernet, improving scalability and efficiency. Performance metrics such as latency, FPS, CPU/RAM utilization, and network overhead are being analyzed to optimize AI inference for edge deployment.
Please visit the link the for see the running architecture. <http://34.69.36.112:8050/?user=Dinesh>
5. Investigating Performance and Key Factors for Real-World Deployment of Grain Image Classification Using Convolutional Neural Networks (Under review)

Conferences

1. **Dinesh Kumar Sah** ✉ et.al ,
Reinforcement Learning Infused MAC for Adaptive Connectivity, Workshop on integrated, intelligent and ubiquitous connectivity for 6g networks (IEEE Wireless Communications and Networking Conference **WCNC-24**) at Dubai, United Arab Emirates, 2024.
2. **Kumari, Rani and Dinesh Kumar Sah** ✉ et.al ,
Optimizing Resource Utilization using Vector Databases in Green Internet of Things, GlobCom-2023 (IEEE Globecom Workshops) at Kuala Lumpur, Malaysia, 2023.
3. **Dinesh Kumar Sah** ✉, Hifzan Ahmad, Anchal Uniyal,
Reliable ILP approach of Max-RWA problem for translucent optical network, WOCN 2016 (Thirteenth International Conference on Wireless and Optical Communications Networks) at India, 2016.
4. Tushar K. Das; Songhita Misra; Suman P. Choudhury; **Dinesh K. Sah**; Ujwala Baruah; Rabul H. Laskar
Comparison of DTW Score and Warping path for Text Dependent Speaker Verification System, ICCPCT 2015 (International Conference on Circuits, Power and Computing Technologies) at India, 2015.
5. Saswati Debnath; B. Soni; U. Baruah; **Dinesh. Kumar. Sah** ✉
Text-dependent speaker verification system: A review, ISCO 2020 (9th International Conference on Intelligent Systems and Control) at India, 2015.
6. Kirti Joon, Namrata Agrawal, Hifzan Ahmad, Vikash Yadav, **Dinesh Kumar Sah** ✉, Cornel Barna
DDoS Attack Prevention Protocol Through Support Vector Machine and Fuzzy Clustering Mechanism on Traffic Flow with Harmonic Homogeneity Validation Technique
SOFA-2018, International Workshop Soft Computing Applications & Soft Computing Applications Springer, India, Aug 2018.
7. Aniket Ninawe, Ajay Kumar Mallick, Vikash Yadav, Hifzan Ahmad, **Dinesh Kumar Sah**, Cornel Barna
Cathedral and Indian Mughal Monument Recognition Using Tensorflow
SOFA-2018, International Workshop Soft Computing Applications & Soft Computing Applications Springer, India, 2018.
8. Kirti, Namrata Agrawal, Sunil Kumar, **Dinesh kumar Sah** ✉
Prevention of DDoS attack through harmonic homogeneity difference mechanism on traffic flow
RAIT-2018, International Conference on Recent Advances in Information Technology & Computing, IEEE, India, Aug 2018.
9. S. Chaya; P. V.Y. Jayasree, Sunil Kumar, **Dinesh Kumar Sah** ✉
Boolean directional sensor orientation solution for K-coverage in wireless sensor network
RAIT-2018, International Conference on Recent Advances in Information Technology & Computing, IEEE, India, Aug 2018.

Note; ✉ Stand for corresponding author

Book Chapters

1. **5G Applications and Architectures**
Dinesh Kumar Sah, D. Praveen Kumar, Chaya Shivalingagowda, P. V. Y. Jayasree
5G Enabled Secure Wireless Networks, Chapter 2, Springer, pp. 45-68, 2018.
2. **Optimization techniques in Wireless sensor networks**
Dinesh Kumar Sah, D Praveen Kumar, Chaya

Soft Computing in Wireless Sensor Networks, Chapter 2, CRC Publications, 2018.

3. **Wireless Sensor Network Routing Protocols Using Machine Learning**

Chaya Shivalingagowda, Hifzan Ahmad, P. V. Y. Jayasree, **Dinesh Kumar Sah**

Architectural Wireless Networks Solutions and Security Issues, Chapter 2, Springer , 2021.

4. **Coverage Optimization using Nature-Inspired Algorithm for Directional Sensor Networks**

Hifzan Ahmad, Chaya Shivalingagowda, Narendra Kohli, **Dinesh Kumar Sah**

Nature-Inspired Computing for Smart Application Design, Chapter 2, Springer, 2018.

Technical and Personal skills

- **Programming Languages:** C, C++, Python, tensorflow, Matlab, CUDA, PHP, JavaScript, and HTML5.
- **Frameworks:** VS-code, Jupyter, OMNet++, Cooja, CPT and Contiki-OS
- **Industry Software Skills:** Ethernet-based networking, Time-Sensitive Networking (TSN), MQTT, Docker, Kubernetes $\LaTeX$.
- **Hands-on experience:** Raspberry Pi, Aurdino, firecell (5G Module) and Edge TPU

Professional Services

Guest editorial Services.....

- Modern Learning Algorithms for Internet of Things, **Internet Technology Letters, Wiley (Indexing: Web of Science, Impact factor: 1.5)**

Conferences Related Services.....

- CAI-2025: PC member for AI for healthcare and life science, Conference on Artificial Intelligence-2025, California, USA.
- INFOCOM-2025: PC member for Workshop on AI-Driven Integration of Terrestrial and Non-Terrestrial Networks (AITNTN).
- 18th Swedish National Computer Networking and Cloud Computing Workshop (SNCNW 2023)
- 2nd Workshop on Engineering Techniques for Distributed Computing Continuum Systems (EDCCS)

Reviewer Services.....

- **Active Reviewer** for International Journal of Communication Systems, ACM transaction on sensor network, ACM Transactions on Asian and Low-Resource Language Information Processing, IEEE transaction on consumer electronics, International Journal of Communication Systems, International Journal of Network Management, KSII Transactions on Internet and Information Systems, American Journal of Engineering and Applied Sciences, Computer communication, etc. **Publons)**
- **Active Member** in IEEE Computer Society, IEEE Communications Society and IEEE Signal Processing Society

Technical training.....

- Various programming languages for placements and competitive examinations in engineering institutes in India during 2015-2016.
- Two-Week FDP on Sensor Networks and IoTs (Sponsored by ICPS Division of DST, Govt. of India)
- Faculty Development Center sponsored FDP on Wireless Sensor Networks (December 2017)

References

- **Phd Supervisor: Prof. Tarachand Amgoth**, Associate Professor, Department of Computer Science and Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, India. **Email:** tarachand@iitism.ac.in
URL: <https://people.iitism.ac.in/~tarachand/>
- **Post doc Manager: Prof. Hossein Fotouhi**, Associate Professor, Division of Networked and Embedded Systems, Data Communication, Mälardalen University (MDU), Västerås, Sweden. **Email:** hossein.fotouhi@mdu.se

URL: https://www.es.mdu.se/staff/2992-Hossein_Fotouhi

- **Prof. Praveen Kumar Donta:** Associate Professor, Department of Computer and System Science, Stockholm University, Stockholm, Sweden. **Email:** praveen.donta@dsv.su.se
URL: <https://www.su.se/english/profiles/prdo2937-1.742888?open-collapse-boxes=body-research>