

# Partha Pratim Ray

*Assistant Professor • Senior Researcher • IoT, Edge Computing and LLM Specialist*

**Email:** parthapratimray1986@gmail.com  
**GitHub:** github.com/ParthaPRay  
**Google Scholar:** scholar.google.co.in/citations?user=ioplflagAAAAJ  
**Orcid ID:** 0000-0003-2306-2792  
**Mobile:** +91-9433668194, +91-7908402850

## Professional Summary

Experienced academic with 12+ years of expertise in IoT and Edge Computing, recognized among the world's top 2% scientists by Stanford University (2020–2024). Proven skills in developing scalable IoT and edge solutions for smart systems and healthcare. Currently transitioning to specialize in Large Language Models (LLMs) and Machine Learning (ML), focusing on quantized LLMs and open-source AI applications on edge. Seeking to bridge research and practical innovations in AI, ML, and LLMs for real-world challenges. Currently seeking internships to deepen expertise in LLM, ML, and AI, with the objective of transitioning into the IT industry to apply academic insights to industry challenges.

## Education

- **Ph.D. in Computer Applications** *Expected: 2026*  
Sikkim University  
*Thesis:* Enabling Large Language Models on Resource-Constrained Edge: A Multi-Faceted Approach  
*GPA:* 9.29/10
- **M.Tech. in Electronics and Communication Engineering (Embedded Systems)** *2011*  
Haldia Institute of Technology, MAKAUT  
*GPA:* 9.60/10
- **B.Tech. in Computer Science and Engineering** *2008*  
B.P. Poddar Institute of Management and Technology, MAKAUT  
*GPA:* 8.15/10
- **GATE Qualified** in Computer Science (CS) *2009*  
*Percentile:* 91.62%

## Key Skills

<b>Programming Languages:</b>	C, Java, HTML, Python
<b>AI/ML/LLM Frameworks:</b>	<b>Familiar:</b> Ollama, PyTorch, scikit-learn, Pandas, NumPy, Matplotlib, NLTK
<b>Tools and Platforms:</b>	Raspberry Pi, Arduino, ESP32, MKR1000, FastAPI, Flask, Sanic, RESTful APIs
<b>Research &amp; Analytics:</b>	IoT, Edge Computing, Large Language Models, Machine Learning Algorithms
<b>Certifications:</b>	Certified Blockchain Expert-V2, Mastering Digital Twins
<b>Soft Skills:</b>	Mentoring, Research & Analysis, Technical Article Writing & Publication

## Professional Experience

**Assistant Professor (Senior Scale)** *Dec 2020 – Present*

Department of Computer Applications, Sikkim University, India

- Authored over 100 SCI-indexed journal articles, 32 conference articles, 7 books, 3 book chapters, showcasing a strong commitment to research excellence in areas like IoT, Edge Computing, and LLM.
- Supervised numerous master's thesis projects and contributed to student academic growth with innovative projects such as IoT-based applications, blockchain integration, and edge computing systems.
- Played a key role in drafting the syllabus for various programs, including MCA, B.Sc. Computer Science, and vocational courses like B.Voc.
- Taught diverse courses ranging from Discrete Mathematics, Data Structures, and Digital Logic to Cybersecurity under NEP 2020 guidelines.
- Organized numerous workshops and FDPs, such as: (i) Online FDPs on LaTeX and Moodle LMS (ii) Seminars on Blockchain Technology, Green Computing, and Machine Intelligence. Delivered hands-on sessions on IoT, LaTeX, and Raspberry Pi.
- Published science communication articles in Dream 2047 on topics like ChatGPT and historical Indian mathematicians.

**Assistant Professor**

*July 2012 – Dec 2020*

Department of Computer Applications, Sikkim University, India

- Conducted research in IoT and edge computing, leading to innovative publications and patents filing.
- Organized and led workshops and conferences on Blockchain, and IoT technologies.
- Contributed to committees like ICT Policy, Admission Working Committee, and NAAC Criterion Search.
- Facilitated job and training opportunities through active participation in the Training and Placement Committee.
- Served as Organizing Chair for the 6th International Conference on Mathematics and Computing (ICMC) and

several TPCs in international-level conferences.

- Contributed to holistic student development through initiatives like Innovation and Entrepreneurship Awareness Workshops and Student Clubs and facilitated student participation in technology-driven activities and competitions.

#### Assistant Professor

Jan 2012 – June 2012

Department of Computer Science and Engineering, Surendra Institute of Engineering and Management, Siliguri, India

- Taught undergraduate courses in C Programming and Embedded Systems.
- Developed curriculum and assessment methods for computer science courses.

## Selected Publications

*For a complete list of publications, please visit my Google Scholar profile.*

#### Journal Articles

1. Ray, P. P., “ChatGPT: A Comprehensive Review on Background, Applications, Key Challenges, Bias, Ethics, Limitations, and Future Scope,” *Internet of Things and Cyber-Physical Systems*, Elsevier, 2023.
2. Ray, P. P., “Benchmarking, Ethical Alignment, and Evaluation Framework for Conversational AI: Advancing Responsible Development of ChatGPT,” *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 2023.
3. Ray, P. P., “A Review on TinyML: State-of-the-art and Prospects,” *Journal of King Saud University - Computer and Information Sciences*, Elsevier, 2022.
4. Ray, P. P., “Timely Need for Navigating the Potential and Downsides of LLMs in Healthcare and Biomedicine,” *Briefings in Bioinformatics*, Oxford University Press, 2024.
5. Ray, P. P., “Stepping With Caution: Large Language Models for Consulting Infectious Diseases,” *Clinical Infectious Diseases*, Oxford University Press, 2024.

## Patents Filed

*For a complete list of patent publications, please visit my Google Scholar profile.*

- “Real-Time Monitoring of Non-Invasive Intravenous Fluid Level for Pervasive and Assistive e-Healthcare using IoT,” Application No: 201831049716, 2019.

## Projects and Consultancy

- **IoT-Based Plant Temperature Monitoring Systems**, Funded by Sikkim University, 2024–25.
- **Intel IoT Center Setup**, Received Intel Galileo kits from Intel India, 2015–16.

## Certifications

- **Certified Blockchain Expert-V2**, Blockchain Council, 2018.
- **Blockchain and Bitcoin Fundamentals**, Udemy, 2018.
- **Mastering Digital Twins**, Coursera, 2019.
- **Annual Refresher Programme in Teaching (ARPIT)**, UGC SWAYAM, 2019.

## Awards & Achievements

- **Fellow**, The Institution of Electronics & Telecommunication Engineers (IETE), 2023.
- **World’s Top 2% Scientist**, Stanford University, 2020–2024.
- **IEI Young Engineers Award**, The Institution of Engineers (India), 2019–20.
- **Emerald Literati Award**, Highly Commended Paper, 2019.
- **Senior Member**, IEEE, since 2019.
- **Young Scientist Award**, Venus International Foundation, 2017.
- **Bharat Vikas Award**, Institute of Self Reliance, 2017.
- **Best Professor in IT Academic Excellence Award**, ICBM-AMP, 2017.
- **Young Achiever Award**, IEAE, 2018.

## Professional Memberships

- **Senior Member**, IEEE
- **Fellow**, IETE
- **Member**, ACM, CSI, IET, IETE, IET, ISCA, IACSIT

## Additional Information

- **Languages**: English, Hindi, Bengali
- **Hobbies**: Writing Articles and Books, Open-Source Contribution, Mentoring Students
- **Volunteer Work**: IEEE CSI Chapter Council Executive Body Member

*References and full publication list available upon request.*