

# PUSHPENDU KAR

SFHEA(UK), FIETE(IN), CEng(UK), SMIEEE(US)

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**Present Address:** PMB 448, Sir Peter Mansfield Building,  
University of Nottingham Ningbo China,  
199 Taikang East Road, Ningbo 315100,  
Zhejiang, China.

**Permanent Address:** Pushpendu Kar, C/o: Mihir Kumar Kar,  
Sonajhil, Sonarpur, 24-Parganas (South),  
Kolkata-700150, West Bengal, India.

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## Career Objective

To be an asset to the organization through the knowledge, skill, and experience acquired during my professional sojourn.

## Research Interests

Wireless Sensor Networks, Internet of Things, Content Centric Networking, BigData, Blockchain.

## Academic Qualifications

- **Doctor of Philosophy (Ph.D)**, Computer Science and Engineering,  
Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India 721302  
Jan 2012 – Jan 2016.
  - Thesis: *Temporary Node-Misbehavior in the Presence of Environmental Effects in Wireless Sensor Networks*
- **Master of Engineering (M. E.)**, Computer Science and Engineering,  
Jadavpur University, Kolkata, West Bengal, India 700032  
Jul 2008 – Jun 2010
  - Dissertation: *Implementation of a Jini Based Service Framework in a Mobile Ad-Hoc Network*
- **Bachelor of Technology (B. Tech)**, Computer Science and Engineering,  
University of Kalyani, Kalyani, Nadia, West Bengal, India 741235  
Jun 2000 – May 2004
  - Dissertation: *Online Blood Pressure Measurement System*

## Professional Memberships/Qualifications

1. **Senior Fellow of Higher Education Academy (SFHEA)**, AdvanceHE, UK, July 2023, Registration No.: PR269780
2. **Fellow, The Institution of Electronics & Telecommunication Engineers (IETE)**, India, September 2023, Registration No.: F-504050
3. **Chartered Engineer (CEng)**, Engineering Council, UK, April 2024, Registration No.: 709992
4. **Senior Member, The Institute of Electrical and Electronics Engineers (IEEE)**, USA, July 2020, Registration No.: 93025879
5. **Sun Certified Java Programmer (SCJP) 5.0**, Sun Microsystems, USA, March 2009, Registration No.: SW409182

## Pedagogical Qualification

1. Postgraduate Certificate in Higher Education (PGCHE) [a masters level teaching qualification] by following UK Professional Standards Framework (UKPSF) of AdvanceHE, UK, November 2023

## Professional Training

1. Completed eight weeks (21<sup>st</sup> May 2006 – 14<sup>th</sup> July 2006) Finishing School program from NIT Durgapur, Durgapur, India conducted by MHRD in consolation with AICTE, Department of IT, NASSCOM & IIT Roorkee, 2006
2. Six months training on J2EE from “STG International (Regional Office)”, Minto Park, Kolkata, India, 2005
3. Three months training on JAVA (Core & Advance) from “CMC Ltd.”, Gariahat, Kolkata, India, 2005

4. Three weeks (4<sup>th</sup> – 23<sup>rd</sup> January 2010) UGC sponsor refresher course on Wireless Ad-Hoc and Sensor Networks, Jadavpur University, Kolkata, India.  
Six months training on Hardware & Networking from “*Computer Foundation*”, Jadavpur, Kolkata, India, 2004.

## Achievements

1. Elected as Fellow of The Institution of Electronics & Telecommunication Engineers (*FIETE*), India, 2023
2. Awarded an ‘Excellent Performance’ rating for overall academic performance in the 2022-2023 and 2023-2024 academic years at the University of Nottingham Ningbo China.
3. Recognized as a High-Level Talent by the Ningbo Municipal Government, China, 2021
4. Received 'Spot Award' for teaching excellence and effective services to The University of Nottingham Ningbo China, 2021
5. Elevated to IEEE Senior Member, 2020
6. Received Best Researcher Award from VDGOD Professional Association, India, 2020
7. Received 2020 IEEE Systems Journal (2020 I.F.: 4.463) Best Paper Award (this is one of the seven papers out of 793 papers [top 1%] that have received the award)
8. ERCIM Alain Bensoussan Fellowship from European Union to pursue postdoc at *Norwegian University of Science and Technology*, Norway, 2017.
9. SERB Overseas Postdoctoral Fellowship from Dept. of Science and Tech., Govt. of India to pursue postdoc at *TU Delft*, Netherlands, 2017 (declined).
10. ERCIM Alain Bensoussan Fellowship from European Union to pursue postdoc at *RISE SICS*, Sweden, 2018 (declined).
11. Erasmus Mundus Postdoctoral Fellowship from European Commission to pursue postdoc at *Northumbria University*, Newcastle upon Tyne, United Kingdom, 2016 (declined).
12. Full financial institute travel grant for attending *IEEE ICC 2015*, London, United Kingdom.
13. Travel grant for attending *XRCI Open 2015*, Bangalore, India.
14. Travel grant for attending *The Fourth IDRBT Doctoral Colloquium*, Hyderabad, India, 2014.

## Professional Experiences (Total: 16 Yrs+)

1. **Assistant Professor** (Full time), School of Computer Science,  
**University of Nottingham UK (China campus)**, 199 Taikang East Road, Ningbo 315100, China  
4<sup>th</sup> March 2019 – Present
2. **Research Fellow** (Full time) [through ERCIM Fellowship], Department of ICT and Natural Sciences  
**Norwegian University of Science and Technology (NTNU)**, 6009 Ålesund, Norway  
01<sup>st</sup> February 2018 – 31<sup>st</sup> January 2019 (1 Yr)
3. **Post-Doctoral Research Fellow** (Full time), Department of Electrical and Computer Engineering  
**National University of Singapore (NUS)**, Singapore 119077  
16<sup>th</sup> November 2016 – 31<sup>st</sup> January 2018 (1 Yr 2 M)
4. **Post-Doctoral Research Fellow** (Full time), Energy Research Institute  
**Nanyang Technological University (NTU)**, Singapore 639798  
16<sup>th</sup> November 2015 – 15<sup>th</sup> November 2016 (1 Yr)
5. **Researcher** (Part time), Department of Electronics and Electrical Communication Engineering  
**IIT Kharagpur**, Kharagpur, West Bengal, India 721302  
11<sup>th</sup> April 2014 - 28<sup>th</sup> August 2014 (4 M)
6. **Visiting Lecturer** (Part time), AMIE Course  
**Institute of Engineers (Kharagpur Local Center)**, Kharagpur, West Bengal, India 721302  
15<sup>th</sup> October 2011 - 30<sup>th</sup> November 2013 (2 Yrs)
7. **Senior Project Assistant** (Full time), Department of Computer Science and Engineering  
**IIT Kharagpur**, Kharagpur, West Bengal, India 721302  
14<sup>th</sup> October 2011 - 31<sup>st</sup> March 2013 (1 Yr 6 M)
8. **Associate System Engineer** (Full time), Software Development  
IBM, Newtown, Rajarhat, Kolkata, India 700156  
17<sup>th</sup> June 2010 - 13<sup>th</sup> October 2011 (1 Yr 4 M)
9. **Lecturer** (Full time), Department of Information Technology  
**Birbhum Institute of Engineering & Technology**, Birbhum, West Bengal, India 731101  
9<sup>th</sup> April 2006 - 31<sup>st</sup> July 2008 (2 Yrs 3 M)

**10. Lecturer** (Full time), Department of Computer Science and Engineering  
**Siliguri Institute of Technology**, Sukna, Darjeeling, West Bengal, India 734009  
25<sup>th</sup> July 2005 - 8<sup>th</sup> April 2006 (9 M)

**11. Visiting Lecturer** (Part time), Bachelor of Computer Application  
**IT Center, North Bengal University**, Darjeeling, West Bengal, India 734013  
1<sup>st</sup> August 2005 - 8<sup>th</sup> April 2006 (9 M)

### Research Visit

1. MiMove Team, Inria Paris, France, 16-20 July 2018

### Courses Taught

- Programming and Algorithms, 5 Semesters
- Mobile Device Programming, 3 Semesters, Course coordinator
- Operating Systems, 3 Semesters, Course coordinator
- Data Communication and Networking, 2 Semesters, Course coordinator
- Object Oriented Programming using Java, 2 Semesters, Course coordinator
- Introduction to Computing, 4 Semesters, Course coordinator



### List of Publications

















#### ❖ Refereed Journals:

1. F. Sun, P. Wang, Y. Zhang, and **P. Kar**, “ $\beta$ FSCM: An Enhanced Food Supply Chain Management System Using Hybrid Blockchain and Recommender Systems”, *Blockchain: Research and Applications (Elsevier)* (Accepted on 12<sup>th</sup> December 2024)
2. Q. Mao, J. Li, H. Zhou, **P. Kar**, and A. G. Bellotti, “ALDII: Adaptive Learning-based Document Image Inpainting to Enhance the Handwritten Chinese Character Legibility of Human and Machine”, *Neurocomputing (Elsevier)* (Accepted on 7<sup>th</sup> November 2024).
3. **P. Kar** and Z. Wang, “Identifying COVID-19 Fake News on Social Networks Using Deep Learning: You will not know what happens next!”, *WSEAS Transactions on Business and Economics*, vol. 21, pp. 1973-1987, October 2024, DoI: 10.37394/23207.2024.21.160
4. C. Yang, C. F. Kwong, D. Chieng, **P. Kar**, K. L. A. Yau, and Y. Chen, “Navigating the Road Ahead: A Comprehensive Survey of Radio Resource Allocation for Vehicle Platooning in C-V2X Communications”, *IEEE Communications Surveys and Tutorials*, vol. 14, no. 8, June 2024, DoI: 10.1109/COMST.2024.3440033
5. **P. Kar**, L. Chen, W. Sheng, C. F. Kwong, and D. Chieng, “Advancing NDN Security: Efficient Identification of Cache Pollution Attacks through Rank Comparison”, *Internet of Things (Elsevier)*, vol. 26, July 2024, DoI: 10.1016/j.iot.2024.101142
6. C. F. Kwong, C. Shi, Q. Liu, S. Yang, D. Chieng, and **P. Kar**, "Autonomous Handover Parameter Optimisation for 5G Cellular Networks using Deep Deterministic Policy Gradient", *Expert Systems With Applications (Elsevier)*, vol. 246, July 2024 DoI: 10.1016/j.eswa.2023.122871
7. L. Hu and **P. Kar**, “Design of a Blockchain-based Secure Health Monitoring System Using Decentralized Machine Learning Technique”, *IEEE Communications Magazine*, vol. 62, no. 1, pp. 46 – 52, January 2024
8. **P. Kar** and S. Feng, “Intelligent Traffic Prediction by Combining Weather and Road Traffic Condition Information: a deep learning-based approach”, *International Journal of Intelligent Transportation Systems Research (Springer)*, July 2023, DoI: 10.1007/s13177-023-00362-4.
9. X. Liang and **P. Kar**, “Robust and Secure File Transmission Through Video Streaming Using Steganography and Blockchain”, *International Journal of Information and Computer Security (Inderscience)*, vol. 24, no. 3-4, pp. 258-283, September 2024, DoI: 10.1504/IJICS.2024.141610.
10. **P. Kar**, R. Chen, and Y. Qian. “An Efficient Producer Mobility Management Technique for Real-time Communication in NDN-based Remote Health Monitoring Systems”, *Smart Health (Elsevier)*, vol. 26, December 2022, DoI: 10.1016/j.smhl.2022.100309.
11. **P. Kar**, K. Chen, J. Shi, “DMACN: A Dynamic Multi-Attribute Caching Mechanism for NDN-Based Remote Health Monitoring System”, *IEEE Transactions on Computers*, vol. 72, no. 5, pp. 1301 – 1313, August 2022

















12. **P. Kar**, A. Kumar, A. Shareef, K. T. Harn, and S. K. Panda, "An Intelligent Lighting Control System for Individual Visual Comfort and Energy Savings in Buildings", *Journal of Reliable Intelligent Environments (Springer)*, August 2022, DoI: 10.1007/s40860-022-00189-y. 
13. D. Li and **P. Kar**, "B-Spot: Blockchain and Steganography based Robust and Secure Photo Transmission Mechanism", *Journal of Mobile Multimedia*, vol. 18, no. 6, pp. 1677–1708, July 2022. 
14. **P. Kar**, Z. Xue, S. P. Ardakani, and C. F. Kwong, "Are Fake Images Bothering You on Social Network? Let's Detect Them Using Recurrent Neural Network", *IEEE Transactions on Computational Social Systems*, vol. 10, no. 2, pp. 783 – 794, March 2022 
15. S. P. Ardakani, C. F. Kwong, **P. Kar**, Q. Liu, and L. LI, "CNN: a Cluster-based Named Data Routing for Vehicular Networks", *IEEE Access*, vol. 9, pp. 159036-159047, November 2021. 
16. Q. Liu, CF Kwong, W. Sun, S. Zhou, L. Li, and **P Kar**, "Reinforcement Learning-Based Joint Self-Optimisation Method for the Fuzzy Logic Handover Algorithm in 5G HetNets", *Neural Computing and Applications (Springer)*, November 2021, DoI: 10.1007/s00521-021-06673-5 
17. P. Zhao, **P. Kar**, and S. P. Ardakani, "ANTON: Activity Recognition Based Smart Home Control System", *SN Computer Science (Springer)*, vol. 2, no. 428, pp. 1-12, August 2021, DoI: 10.1007/s42979-021-00824-0 
18. L. Li, C. F. Kwong, Q. Liu, **P. Kar**, and S. P. Ardakani, "A Novel Cooperative Cache Policy for Wireless Networks", *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 5568935, 18 pages, August 2021. DoI:10.1155/2021/5568935 
19. S. Misra, S. Goswami, C. Taneja, and **P. Kar**, "Heterogeneous Polydentate Mobile Chelating Node to Detect Breach in Surveillance Sensor Network", *Security and Privacy (wiley)*, vol. 4, no. 6, pp. e175:1-22, June 2021. 
20. **P. Kar**, S. Misra, A. Mandal, H. Wang, "SOS: NDN Based Service-Oriented Game-Theoretic Efficient Security Scheme for IoT Networks", *IEEE Transactions on Network and Service Management*, vol. 18, no. 3, pp. 3197-3208, Sept. 2021. 
21. **P. Kar** and H. Wang "EZPlugIn: Plug-n-Play Framework for a Heterogeneous IoT Infrastructure for Smart Home," *IEEE Internet of Things Magazine*, vol. 4, no. 3, pp. 104-108, September 2021. 
22. **P. Kar** and S. Misra "On the Effects of Transfaulty Sensor Nodes in Stationary Wireless Sensor Network Systems," *IEEE Sensors Journal*, vol. 19, no. 13, pp. 5022 – 5029, March 2019 
23. **P. Kar**, A. Shareef, A. Kumar, T. H. Koh, B. K. Mallikarjuna, and S. K. Panda, "ReViCEE: A Recommendation based approach for personalized control Visual Comfort & Energy Efficiency in buildings", *Building and Environment (Elsevier)*, vol. 152, pp. 135 – 144, April 2019 
24. **P. Kar**, S. Misra, and M. S. Obaidat, "RILoD: Reduction of Information Loss in a WSN System in the Presence of Dumb Nodes," *IEEE Systems Journal*, vol. 13, no. 1, pp. 336 – 344, January 2018. (**Received 2020 IEEE Systems Journal Best Paper Award**). 
25. **P. Kar**, A. Roy, S. Misra, and M. S. Obaidat, "On the Effects of Communication Range Shrinkage of Sensor Nodes in Mobile Wireless Sensor Networks Due to Adverse Environmental Conditions," *IEEE Systems Journal*, vol. 12, no. 3, pp. 2048-2055, September 2018. 
26. A. Kumar, **P. Kar**, R. Warriar, A. Kajale, and S. K. Panda, "Implementation of Smart LED Lighting and Efficient Data Management System for Smart Buildings," *Energy Procedia (Elsevier)*, vol. 143, pp. 173-178, December 2017. 
27. A. Roy, S. Misra, **P. Kar**, and A. Mondal, "Topology Control for Self-Adaptation in Wireless Sensor Networks with Temporary Connection Impairment," *ACM Transactions on Autonomous and Adaptive Systems*, vol. 11, no. 4, pp. 1-34, February 2017. 
28. **P. Kar** and S. Misra, "Reliable and Efficient Data Acquisition in Wireless Sensor Network in the Presence of Transfaulty Nodes," *IEEE Transactions on Network and Service Management*, vol. 13, no. 1, pp. 99-112, January 2016. 
29. **P. Kar**, A. Roy, and S. Misra, "Connectivity Re-establishment in Self-organizing Sensor Networks with Dumb Nodes," *ACM Transactions on Autonomous and Adaptive Systems*, vol. 10, no. 4, pp. 1-30, February 2016. 
30. A. Roy, **P. Kar**, S. Misra, and M. S. Obaidat, "D3: Distributed Approach for the Detection of Dumb Nodes in Wireless Sensor Networks," *International Journal of Communication Systems (Wiley)*, vol. 30, no. 1, pp. e2913, January 2015 

31. **P. Kar** and S. Misra, "Detouring Dynamic Routing Holes in Stationary Wireless Sensor Networks in the Presence of Temporarily Misbehaving Nodes," *International Journal of Communication Systems* (Wiley), vol. 30, no. 4, pp. e3009, June 2015 
32. S. Misra, **P. Kar**, A. Roy, and M. S. Obaidat, "Existence of Dumb Nodes in Stationary Wireless Sensor Network," *Journal of Systems and Software* (Elsevier), vol. 91, pp. 135–146, May 2014. 

## ❖ International Conferences / Workshops

1. N. Chen, CF Kwong, D. Chieng, **P. Kar**, Z. Chu, and P. Fan, "Efficient and Secure Data Sharing in Scalable C-V2X with Dynamic Sharding Blockchain and Zero-Knowledge Proofs", in *proceedings of the IEEE International Conference on Communications (ICC 2025)*, Montreal, Canada, 8 - 12 June 2025 (Accepted on 18<sup>th</sup> January 2025) 
2. Y. Zhu and **P. Kar**, "An Accurate Salary Estimation Scheme by Using BigData Technique", in *proceedings of the 11<sup>th</sup> IEEE/ACM International Conference on Big Data Computing, Applications, and Technologies (BDCAT 2024)*, Sharjah, United Arab Emirates, 16 - 19 December 2024 
3. N. Chen, C. F. Kwong, D. Chieng, and **P. Kar**, "Efficient Data Processing in C-V2X with Dynamic Sharding Blockchain and Zero-Knowledge Proofs", in *proceedings of International Conference on Internet of Things (ICIOT 2024)*, Ningbo, China, 11-12 October 2024 
4. **P. Kar** and P. Ingkasit, "Development of a User-Friendly and Efficient Control System for Smart Home", in *proceedings of IEEE International Conference on Internet of Things (iThings 2024)*, Copenhagen, Denmark, 19 – 22 August 2024 
5. Z. Bi and **P. Kar**, "BUMS: A Novel Balanced Multi-model Machine Learning System for Real-Time Blood Glucose Prediction and Abnormal Glucose Events Detection", in *proceedings of IEEE International Conference on E-health Networking, Application & Services (IEEE Healthcom 2023)*, Chongqing, China, 15–17 December 2023 
6. I. Cho, D. Towey, and **P. Kar**, "Using Obfuscators to Test Compilers: A Metamorphic Experience", in *proceedings of the 15th IEEE International Workshop on Software Test Automation in conjugation with IEEE COMPSAC 2023*, Torino, Italy, Jun 26-30, 2023 
7. R. Arathy, B. Bhabani, M. Malakar, J. Mahapatro, and **P Kar**, "Jamming Attack classification in Wireless Networks using Machine Learning", in *proceedings of the 4<sup>th</sup> International Conference on Communication and Intelligent Systems (ICCIS 2022)*, New Delhi, India, Dec 19-20, 2022. 
8. Z. Wang, Y. Guo, T. Xia, B. Ye, and **P. Kar**, "Detection of COVID-19 Through Thermal and Voice Sensing Using Smartphone", in *proceedings of the 22<sup>nd</sup> IEEE/ACIS International Conference on Computer and Information Science (ICIS 2022)*, Zhuhai, China, Jun 26-28, 2022 
9. L. Hu, Y. Huang, and **P. Kar**, "An Integrated Single Device Framework for Combined Face Recognition and Covid-19 Detection Using Thermal Infrared Imagery", in *proceedings of the 22<sup>nd</sup> IEEE/ACIS International Conference on Computer and Information Science (ICIS 2022)*, Zhuhai, China, Jun 26-28, 2022 
10. S. Datta, M. Roy, **P. Kar**, "Application of IoT in Smart Epidemic Management in context of Covid-19", in *proceedings of the 22<sup>nd</sup> IEEE International Conference on High Performance Switching and Routing (HPSR 2021)*, pp. 1-6, Paris, France, Jun 2021. 
11. J. Shi, W. Sheng, **P. Kar**, M. Roy, S. Datta, "A Novel Framework for Predicting the Spread of COVID-19 by Contact Tracing through Smartphone", in *proceedings of the 17<sup>th</sup> IEEE International Wireless Communications and Mobile Computing Conference (IWCMC 2021)*, pp. 570-575, Harbin, China, Jun 2021. 
12. R. Chen, Y. Zhang, Y. Fei, and **P. Kar**, "WLEACH-CK: Weighted K-Means Based LEACH-C Algorithm for Cluster Head Selection", in *proceedings of the 17<sup>th</sup> IEEE International Conference on the Design of Reliable Communication Networks (DRCN 2021)*, pp. 1-6, Milan, Italy, April 2021. 
13. **P. Kar**, Y. Dong, Y. Li, X. Ma, X. Ding, Y. Wang, "NDN Based Plug-n-Play and Secure Remote Health Monitoring System", in *proceedings of the IEEE International Conference on Communication (ICC 2021)*, pp. 1-6, Montreal, Canada, Jun 2021. 
14. Z. Song and **P. Kar**, "Name-Signature Look Up System: A Security Enhancement to Named Data Networking", in *proceedings of the 19<sup>th</sup> IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom 2020)*, pp. 1444-1448, Guangzhou, China, Dec 2020. 



15. S. Wu, Y. Yuan, and **P. Kar**, “Lightweight Verification and Fine-grained Access Control in Named Data Networking Based on Schnorr Signature and Hash Functions”, in *proceedings of the 20<sup>th</sup> IEEE International Conference on Communication Technology (ICCT 2020)*, pp. 1561-1566, Nanning, China, Oct 2020. 
16. A. Kumar, A. Shareef, K. T. Harn, **P. Kar**, and S. K. Panda, “A Complete Hardware Setup for Smart Lighting System”, in *Proceedings of the IEEE International Conference on Sustainable Energy Technologies and Systems (ICSETS 2019)*, pp. 297-300, Bhubaneswar, India, Feb 2019. 
17. **P. Kar**, S. Misra, A. Mandal, and H. Wang, “SecureIoT: Hop-Count Based Service-Oriented Efficient Security Solution for IoT”, in *Proceedings of the ACM International Workshop on Future Industrial Communication Networks (FICN 2018) in conjunction with ACM MobiCom 2018*, pp. 15-20, New Delhi, India, Nov 2018. 
18. **P. Kar** and B. Dappuri “Site Survey and Radio Frequency Planning for the Deployment of Next Generation WLANs”, in *Proceedings of the IEEE International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET 2018)*, pp. 1-4, Chennai, India, 2018. 
19. **P. Kar**, S. Das, and A. Kumar “PreCoRe: Predictive Connectivity Reestablishment in Wireless Sensor Network in the Presence of Dumb Nodes,” in *Proceedings of the IEEE Region 10 Conference (TENCON 2017)*, pp. 403-408, Penang, Malaysia, November 2017. 
20. A. Kumar, A. Kajale, **P. Kar**, R. Warier, A. Shareef, S. K. Panda, “Location-aware Smart Lighting System for Individual Visual Comfort in Buildings,” in *Proceedings of the 6<sup>th</sup> IEEE Global Conference on Consumer Electronics (GCCE 2017)*, pp. 1-2, Nagoya, Japan, October 2017. 
21. A. Kumar, A. Kajale, **P. Kar**, R. Warier, and S. K. Panda, “Implementation and Integration of a Smart App in a Smart Building for Personal Visual Comfort,” in *Proceedings of the 12<sup>th</sup> IEEE International Conference on Power Electronics and Drive Systems (PEDS 2017)*, pp. 1161-1166, Honolulu, Hawaii, USA, December 2017. 
22. S. Das, **P. Kar**, and S. Barman, “Analysis Of IEEE 802.11 WLAN Frame Aggregation Under Different Network Conditions,” in *Proceedings of the IEEE International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET 2017)*, pp. 1240-1245, Chennai, India, March 2017. 
23. **P. Kar**, S. Barman, and S. Das, “ISCP: Inter State changing problem in Wireless Sensor Network with dumb nodes,” in *Proceedings of the International Conference on Computing and Communication Systems (ICCS 2016)*, Shillong, India, November 2016, DoI:10.1007/978-981-10-6890-4\_2. 
24. S. Das, **P. Kar**, and D. K. Jana, “SDH: Self detection and Healing mechanism for dumb nodes in Wireless Sensor Network”, in *Proceedings of the IEEE Region 10 Conference (TENCON 2016)*, pp. 2792-2795, Singapore, November 2016. 
25. **P. Kar**, R. S. Reddy, P. Gupta, J. Dauwels, and A. Ukil, “FLoGPN: A Reputation Based Scheme for Fault Localization in Gas Pipeline Network,” in *Proceedings of the 42<sup>nd</sup> Annual Conference of IEEE Industrial Electronics Society (IECON 2016)*, pp. 4651-4656, Florence, Italy, October, 2016 (**Received best presentation award**). 
26. **P. Kar**, A. Roy, S. Misra, and M. S. Obaidat, “Energy-Efficient Connectivity Re-establishment in WSN in the Presence of Dumb Nodes,” in *Proceedings of the IEEE ICC 2015 — 4th IEEE International Workshop on Smart Communication Protocols and Algorithms (SCPA)*, pp. 1485 – 1490, London, UK, June 2015. 
27. A. Roy, **P. Kar**, and S. Misra, “Detection of Dumb Nodes in a Stationary Wireless Sensor Network,” in *Proceedings of the 11<sup>th</sup> IEEE India Conference (INDICON 2014)*, pp. 1–6, Pune, Maharashtra, India, December, 2014. 
28. M. Roy, **P. Kar**, and N. Mukherjee, “A Jini Based Implementation for Best Leader Node Selection in MANETs,” in *Proceedings of the International Conference on Computer Networks & Communications (NetCom 2012)*, pp. 15-22, Chennai, India, December 2012. 
29. M. Roy, **P. Kar**, and N. Mukherjee, “An Enhanced Service Framework in MANETs for Application in Emergency Services,” in *Proceedings of the IEEE International Conference on Intelligent Network and Computing (ICINC 2010)*, no.1, pp.191-198, Kuala Lumpur, Malaysia, November 2010. 
30. M. Roy, **P. Kar**, and N. Mukherjee, “Determining JINI Leasing Time Limits Using the Random Waypoint Mobility Model in Mobile Ad Hoc Networks,” in *Proceedings of the 10<sup>th</sup> IEEE International Conference on Networking and Information Technology (ICNIT 2010)*, pp. 64-69, Manila, Philippines, June 2010. 

## ❖ Books

### ➤ Authored

1. **P. Kar**, M. Roy, and S. Dutta, “Recommender Systems: Algorithms and their Applications”, Springer, June 2024, ISBN: 978-981-97-0537-5 [Link]

➤ **Edited**

1. M. Roy, **P. Kar**, and S. Dutta, “Recommender Systems: A Multi-Disciplinary Approach”, *CRC Press*, June 2023, ISBN: 9781003319122 [Link]
2. M. Roy, **P. Kar**, and S. Dutta, “Interoperability in IoT for Smart Systems”, *CRC Press*, December 2020, ISBN: 9780367519865 [Link]
3. G. G. Md. Nawaz Ali, Md. N. A. Rahim, and **P. Kar**, “Vehicular Ad-Hoc Networks: Applications and Technology”, Nova science publishers, September 2020, ISBN: 978-1-53618-038-1 [Link]

❖ **Book Chapters**

1. S. Singh, M. Roy, S. Datta, and **P. Kar**, "Application of Swarm Intelligence in Recommender Systems", in *Recommender Systems: A Multi-Disciplinary Approach*, CRC Press, June 3023, DOI: 10.1201/9781003319122
2. A. Saha, S. Dey, M. Roy, S. Datta, **P. Kar**, "Recommendation Systems for Choosing Online Learning Resources: A Hands-On Approach", in *Recommender Systems: A Multi-Disciplinary Approach*, CRC Press, June 3023, DOI: 10.1201/9781003319122
3. **P. Kar**, “Optimal Hole Coverage in the Presence of Dumb Node in Wireless Sensor Networks”, in *Vehicular Ad-Hoc Networks: Applications and Technology*, Nova science publishers, September 2020
4. **P. Kar** and A. Das, “Artificial Neural Networks and Learning Techniques”, in P. Samui (Eds.), *Advanced Computational Techniques for Simulation-Based Engineering*, IGI Global, USA, DOI: 10.4018/978-1-4666-9479-8.ch009, March 2016.

**Patents**

1. S. Misra, S. Goswami, **P. Kar**, and A. Roy, “PKI Enabled Time Stamped Digital Signing System Involving Certification Authority Issued Digital Certificate Cryptographic Token With Real-Time Revocation Verification”, Indian patent **granted** on 24<sup>th</sup> June 2024 (Patent no: 537779).
2. S. Misra, A. Roy, **P. Kar**, and S. Goswami, “An Adverse Environmental Effect Resistant Seamless Wireless Sensor Network System”, Indian patent **granted** on 12<sup>th</sup> December 2023 (Patent no: 480946).
3. S. Misra, **P. Kar**, A. Roy, and S. Goswami, “An Advanced Wireless Sensor Network System and Method for Accurate Information Gathering from a Radiation Affected Area”, Indian patent **granted** on 3<sup>rd</sup> August 2023 (Patent no: 442698).
4. **P. Kar** and L. Hu, “A Health Monitoring System”, Chinese patent filed on 23<sup>rd</sup> September 2022 (Patent no: 202211168088.9)
5. Q. Mao, A. G. Bellotti, **P. Kar**, “A text image repair method, device and storage medium”, Chinese patent filed on 28<sup>th</sup> March 2024 (Patent no: 202410370947.5)
6. A. Kumar, A. Shareef, **P. Kar**, B. K. Mallikarjuna, T. H. Koh, and S. K. Panda, “An Intelligent Lighting System for Smart Buildings Using Multi-Agent-Enabled Wireless Sensor-Actuator Network”, Singapore patent filed on 1<sup>st</sup> June 2018 (Patent no: 10201804681P)

**Research Grants**

1. **Project title:** Research on Adaptive Radio Resource Allocation for Vehicle Platooning in 5G Networks: A DDPG and NOMA-Based Approach  
**Sponsoring agency:** Ningbo Natural Science Foundation (Chinese government research agency)  
**Role:** Co-Investigator (CoI)  
**Budget:** ¥48,000  
**Duration:** 2025-2027 (Ongoing)
2. **Project title:** Research on credit risk assessment and decision support application based on Ningbo financial intelligence  
**Sponsoring agency:** Ningbo Municipal Government, China  
**Role:** Co-Investigator (CoI)  
**Budget:** ¥1,000,000  
**Duration:** 2022-2026 (Ongoing)

3. **Project title:** DOMINANT: Development of an Efficient Plug-n-Play and Real-Time Remote Health Monitoring System  
**Sponsoring agency:** Ningbo Science & Technology Bureau (Chinese government research agency)  
**Role:** Principal Investigator (PI)  
**Budget:** ¥200,000  
**Duration:** 2020-2022 (Completed)
4. **Project title:** Implementation of Named Data Networking Based Plug-n-Play and Secure Framework for Heterogeneous IoT Network  
**Sponsoring agency:** University of Nottingham Ningbo China  
**Role:** Principal Investigator (PI)  
**Budget:** ¥30,000  
**Duration:** 2019-2021 (Completed)
5. **Project title:** EZPlugIn: Universal Plug-n-Play Framework in a Heterogeneous IoT Infrastructure  
**Sponsoring agency:** European Union  
**Role:** Principal Investigator (PI)  
**Budget:** €46,000  
**Duration:** 2018-2019 (Completed)

### Research Projects Involved In:

1. **Title:** Intelligent Information Management System in Smart Buildings Using Multi-Agent-Enabled Wireless Sensor-Actuator Network  
**Sponsoring Agency:** Building & Construction Authority, Singapore  
**Description:** In this project, we aim at innovations in the intelligent information system for building Operation and management. This is performed using novel technologies of Wireless Sensor Actuator Network (WSAN) and Multi-Agent Systems (MAS).  
**Technology Used:** MATLAB, JAVA, Python, Processing Code, PCB Design, Sensor Technology  
**Institution:** National University of Singapore (NUS), Singapore  
**Role:** System design, simulation, implementation, and deployment (Postdoctoral Research Fellow)
2. **Title:** Advanced Multi-Sensor Anomaly Monitoring and Analytics for Gas Pipeline  
**Sponsoring Agency:** Energy Management Authority, Singapore  
**Description:** In this project, my focus was to explore possible detection techniques for identifying, Analyzing and then locating anomalies (such as leakage, water ingress, deformation, etc.) of underground natural gas pipeline, as well as perform advanced data analytics based predictive maintenance for the possible future failure-prone zones.  
**Technology Used:** MATLAB, COMSOL, OpenFoam  
**Institution:** Nanyang Technological University (NTU), Singapore.  
**Role:** System design, simulation, implementation, and deployment (Postdoctoral Research Fellow)
3. **Title:** Checking Border Violation by Civilians Through Technological Solution: Phase I  
**Sponsoring Agency:** Border Security Force (BSF), Govt. of India  
**Description:** This project includes a survey of related works, proposes new solutions for automated Checking border violations, documentation, and writing proposal.  
**Technology Used:** Wireless Sensor Network (WSN) and video camera  
**Institution:** Indian Institute of Technology Kharagpur (IIT Kharagpur), West Bengal.  
**Role:** Survey related works, propose solutions, documentation, and report writing. (Researcher)
4. **Title:** Towards Robust Efficient and Secure Data Acquisition in Underwater Sensor Networks (TRE)  
**Sponsoring Agency:** Department of Information Technology(DIT), Govt. of India  
**Description:** Design and implementation of network protocols toward the development of an Underwater acoustic network simulator  
**Technology Used:** Network Simulator Version 3 (NS-3), MatLab  
**Institution:** Indian Institute of Technology Kharagpur (IIT Kharagpur), West Bengal, India  
**Role:** Simulator Development using NS-3 (Senior Project Assistant)

### Other Projects Involved In:

1. **Title:** Walmart Purchase Order Transformation  
**Client Name:** Walmart Americans.  
**Description:** This project developed an online system to create and edit purchase agreements and Purchase orders for the suppliers by adding item information with supplier information and send it to the supplier.  
**Technology Used:** Java, J2EE, JSF, and DB2.



**Organization:** IBM India Pvt. Ltd (Global Business Service)

**Role:** Design and development (Associate System Engineer)

2. **Title:** Event Management System

**Description:** Developed an online application for managing all the activities of an educational institute. This project has three major modules such as Administrator, Speaker and Participant.

**Technology Used:** JSP using Struts framework & DB2 database

**Organization:** IBM India Pvt. Ltd (Global Business Service)

**Role:** System design and development (Associate System Engineer)

3. **Title:** Data Tracking System (version-1.0)

**Description:** This project helps to computerize and integrate the flow of operation of the Crime Record Branch and Central Finger Print Branch in National Crime Records Bureau

**Technology Used:** VISUAL BASIC 6.0, MS-Access

**Organization:** National Crime Records Bureau (NCRB), Ministry of Home Affairs, New Delhi, India.

**Role:** System design, writing programs using Visual Basic 6.0 (Internship student)

## Membership

1. Institute of Electrical and Electronics Engineers (IEEE), Senior Member, Id: 93025879
2. Association for Computing Machinery (ACM), Member, Id: 1355491
3. Institution of Engineering and Technology (IET), Member, Id: 1101015556
4. International Association of Computer Science and Information Technology (IACSIT), Lifetime Member, Id: 80339962

## Activities

### ❖ Professional Institution Leadership

1. International Professional Registration Advisor (IPRA), The Institution of Engineering and Technology (IET), UK, 2024 - Present.
2. Professional Registration Interviewer (PRI) for CEng/IEng, The Institution of Engineering and Technology (IET), UK, 2024 - Present.

### ❖ Research Laboratory Development

1. *Co-Developer*, Next Generation Internet of Things (NGIoE) Laboratory, Faculty of Science and Engineering, University of Nottingham Ningbo, China (Directors: Dr. Chiew-Foong Kwong and Co-Director: Dr. David Chieng)

### ❖ Editorial Activities

1. *Guest Editor*, PLOS ONE, 2024 – Present.
2. *Editorial Board Member*, Computing and Artificial Intelligence, 2024 - 2026
3. *Guest Editor*, Internet of Medical Things (IoMT): Current Challenges to Future Solutions with Innovative Techniques and Tools for Smart Healthcare Applications, Frontiers in Communications and Networks (Impact factor: 2.21), 2023 - 2024.
4. *Editorial Board Member*, International Journal of Engineering Business Management, Sage Publisher (Impact factor: 3.3), 2022 - Present
5. *Academic Editor*, Journal of Healthcare Engineering, Hindawi (Impact factor: 2.68), 2021 - 2023
6. *Editor*, American Journal of Networks and Communications, Science Publishing Group, 2022 – 2024
7. *Review Editor*, Frontiers in the Internet of Things - IoT Services and Applications, 2022 – Present

### ❖ Distinguish Talks:

1. *Invited Talk*: “Identifying COVID-19 Fake News on Social Networks Using Deep Learning: You will not know what happens next!”, the 8<sup>th</sup> International Conference on Mathematical Models & Computational Techniques in Science & Engineering (MMCTSE 2024), Athens, Greece, 02<sup>nd</sup> June 2024
2. *Invited Talk*: “Smart Home Control Through Activity Recognition”, Techno College of Engineering Agartala, Tripura, India, 22<sup>nd</sup> May 2024
3. *Keynote Speech*: “Enhancing NDN Security: Name Signature Lookup System”, 13<sup>th</sup> International Conference of Information and Communication Technology (ICTech 2024), Xiamen, China, 13<sup>th</sup> April 2024
4. *Keynote Speech*: “Activity Recognition Based Smart Home Control System”, International Conference on Image, Algorithms and Artificial Intelligence (ICIAAI 2023), Singapore, 11<sup>th</sup> August 2023

5. **Keynote Speech:** “Activity Recognition Based Smart Home Control System”, International Conference on Mechatronics and Automation Technology (ICMAT 2022), Wuhan, China, 29<sup>th</sup> October 2022
6. **Keynote Speech:** “Name Signature Lookup System for Enhanced Security of NDN-based IoT Networks”, 2<sup>nd</sup> International Conference on Computer, Remote Sensing, and Aerospace (CRSA 2022), Osaka, Japan, 26<sup>th</sup> August 2022
7. **Keynote Speech:** “Name Signature Lookup System for Enhanced Security of NDN-based IoT Networks”, International Faculty Development Program, Sharda University, Noida, India, 23<sup>rd</sup> June 2022
8. **Keynote Speech:** “Activity Recognition Based Intelligent Sensory System for Smart Home Control”, International Conference on 3D Immersion, Interaction and Multi-sensory Experiences (ICDIIME 2022), Madrid, Spain, 27<sup>th</sup> June 2022
9. **Keynote Speech:** “Activity Recognition Based Smart Home Control System”, International Conference on Algorithms, Microchips and Network Applications (AMNA 2022), Zhuhai, China, 18<sup>th</sup> February 2022
10. **Keynote Speech:** “Recommendation based approach for personalized control, Visual Comfort & Energy Efficiency in office buildings”, International Conference on Computer Graphics, Artificial Intelligence and Data Processing (ICCAID 2021), Harbin, China, 24<sup>th</sup> December 2021
11. **Keynote Speech:** “Named Data Networking Based Interoperable and Secure Framework for Heterogeneous IoT Networks”, International Conference on Internet of Things and Machine Learning (IoTML 2021), Dalian, China, 17<sup>th</sup> December 2021
12. **Keynote Speech:** “Security Enhancement to Named Data Networking”, International Conference on Cyber Warfare, Security & Space Research (SpacSec'21), Jaipur, India, 10<sup>th</sup> December 2021
13. **Invited Talk:** “Personalized Visual Comfort and Energy Efficiency in Office Buildings”, International Conference on Sustainability and Equity: Digital Society, Bhubaneswar, India, 24<sup>th</sup> November 2020
14. **Invited Talk:** “Personalized Visual Comfort and Energy Efficiency in Office Buildings”, co-organized by IEEE Kharagpur Section and National Academy of Sciences India (NASI) Kharagpur Chapter, 16<sup>th</sup> July 2020
15. **Keynote Speech:** “Named Data Networking: towards data-centric, fast and secure new generation Internet technology”, 5<sup>th</sup> International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2020), Mauritius, 25<sup>th</sup> June 2020
16. **Keynote Speech:** “Named Data Networking: towards data-centric, fast and secure new generation Internet technology”, 2<sup>nd</sup> International Conference on Information Technology and Electrical Engineering (ICITEE 2019), Changsha, Hunan, China, 6<sup>th</sup> December 2019
17. **Invited talk:** “Underwater Sensor Network Protocols at Various Layers”, Faculty Development Program, Haldia Institute of Technology, Haldia, India, 4<sup>th</sup> August 2016

#### ❖ Conference Chair:

1. **General Chair:** Asia-Europe Conference on Cybersecurity, Internet of Things and Soft Computing (CITSC 2025), 10-12 January 2025, Rimini, Italy.
2. **Technical Program Committee Chair:** International Conference on Internet of Things (ICIOT 2024), 24 - 25 October 2024, Ningbo, China
3. **Publication Chair:** International Conference on Artificial Intelligence and Computer Information Science (AICIS 2024), 15-17 March 2024, Guangzhou, China.
4. **Publication Chair:** 2<sup>nd</sup> International Conference on Computer, Internet of Things and Control Engineering (CITCE 2023), 3 - 5 November 2023, Leicester, UK.
5. **Program Committee Chair:** International Conference on Images, Algorithms and Artificial Intelligence (ICIAAI 2023), 11 – 13 August 2023, Singapore
6. **General Chair:** 2<sup>nd</sup> International Conference on 3D Immersion, Interaction and Multi-sensory Experiences (ICDIIME 2023), 27-29 June 2023, Madrid, Spain.
7. **Publication Chair:** 2<sup>nd</sup> International Conference on Computer, Internet of Things and Control Engineering (CITCE 2022), 11 - 13 November 2022, Sanya, China.
8. **Publication Chair:** 2<sup>nd</sup> International Conference on Artificial Intelligence, Virtual Reality and Visualization (AIVRV 2022), 23 - 25 September 2022, Chongqing, China.
9. **General Chair:** International Conference on Advanced Communications and Machine Intelligence (MICA 2022), 7-9 July 2022, Tamil Nadu, India.
10. **General Chair:** International Conference on 3D Immersion, Interaction and Multi-sensory Experiences (ICDIIME 2022), 27-29 June 2022, Madrid, Spain.
11. **International Advisory Chair:** 10<sup>th</sup> International Conference of Information and Communication Technology (ICICT2020), 24-25 April 2020, Wuhan, Hubei, China.

#### ❖ Conference Session Chair:

1. 17<sup>th</sup> IEEE International Wireless Communications & Mobile Computing Conference (IWCMC 2021), June 2021, Harbin, China.

2. International Conference on Sustainability and Equity: Digital Society, 24 November 2020, Bhubaneswar, India,
3. 20<sup>th</sup> IEEE International Conference on Communication Technology (ICCT 2020), October 2020, Nanning, China.
4. ACM International Workshop on Future Industrial Communication Networks (FICN) in conjunction with ACM MobiCom, November 2018, New Delhi, India.
5. IEEE Region 10 Conference (TENCON 2016), November 2016, Singapore.

❖ **Conference International Advisory Committee Member:**

1. International Conference on Intelligent Systems and Industrial Instrumentation (CISII 2024), 20-21 September 2024, Kolkata, India
2. 3rd International Conference on Advanced Computing and Software Engineering (ICACSE 2021), 19-20 February 2021, Sultanpur, Uttar Pradesh, India.
3. International Conference on Research and Applications in Artificial Intelligence (RAAI 2020), 19-20 December 2020, Kolkata, India.
4. International Conference on Innovations in Computational Intelligence and Computer Vision (ICICV 2020), 17-19 January 2020, Jaipur, Rajasthan.
5. International Conference on Applied Mathematics and Computational Sciences (ICAMCS 2019), October 17-19, 2019, Dehradun, India.
6. International Conference on Advanced Computing and Software Engineering (ICACSE 2019), February 2019, Sultanpur, U.P., India.

❖ **Conference Technical Program Committee Member:**

1. The 6<sup>th</sup> International Conference on Artificial Intelligence, Robotics, and Control, 7 - 9 May 2025, Savannah, GA, USA
2. The IARIA Annual Congress on Frontiers in Science, Technology, Services, and Applications (IARIA Congress 2025), 6 - 10 July 2025, Venice, Italy
3. IEEE International Conference on Communication: SAC E-Health Track (ICC2025:SAC-EH), 8–12 June 2025, Montreal, Canada.
4. The 9<sup>th</sup> International Conference on Digital Signal Processing (ICDSP 2025), 21-23 February 2025, Chengdu, China
5. The 15<sup>th</sup> IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS2025), 25-27 February 2025, Dubai, UAE
6. IEEE International Conference on E-health Networking, Application & Services (IEEE Healthcom 2024), 18–20 November 2024, Nara, Japan.
7. The 10<sup>th</sup> International Conference on Cloud and Big Data Computing (CBDCOM 2024), 5-8 November 2024, Malay, Philippines
8. The 14<sup>th</sup> International Conference on Software Technology and Engineering (ICSTE 2024), 16-18 August 2024, Macau, China.
9. IEEE Global Communications Conference: Communication & Information Systems Security (Globecom 2024 CISS), 8–12 December 2024, Cape Town, South Africa.
10. The 9<sup>th</sup> International Conference on Information and Network Technologies (ICINT 2024), 24-26 May 2024, Tokyo, Japan.
11. The 7<sup>th</sup> World Conference on Computing and Communication Technologies (WCCCT 2024), 12-14 April 2024, Chengdu, China
12. IEEE International Conference on E-health Networking, Application & Services (IEEE Healthcom 2023), 15–17 December 2023, Chongqing, China.
13. IEEE International Conference on Communication: SAC E-Health Track (ICC2024:SAC-EH), 9–13 June 2024, Denver, CO, USA.
14. The 4<sup>th</sup> International Conference on Cloud and Big Data (CLBD 2023), 11 - 12 November 2023, Dubai, UAE.
15. The 15<sup>th</sup> International Conference on Networks & Communications (NeCoM 2023), 23 - 24 September 2023, Toronto, Canada
16. The 6<sup>th</sup> International Conference on Algorithms, Computing and Artificial Intelligence (ACAI 2023), 22 - 24 December 2023, Sanya, China
17. The 7<sup>th</sup> World Conference on Computing and Communication Technologies (WCCCT 2024), 22-24 March 2024, Chengdu, China.
18. The 12<sup>th</sup> IEEE International Conference on Communications, Networks, and Satellite (ComNetSat 2023), 23-25 November 2023, Malang, Indonesia
19. The 8<sup>th</sup> International Conference on Digital Signal Processing (ICDSP 2024), 23-25 February 2024, Hangzhou, China

20. International Conference on Communications, Computing and Artificial Intelligence(CCCAI 2023), 23-25 June 2023, Shanghai, China
21. IEEE International Conference on Communication: SAC E-Health Track (ICC 2022:SAC-EH) 28 May – 01 June 2022, Rome, Italy.
22. The 6<sup>th</sup> World Conference on Computing and Communication Technologies (WCCCT 2023), 6 – 8 January 2023, Chengdu, China
23. The 12<sup>th</sup> International Conference on Communication and Network Security (ICCNS 2022), 1-3 December 2022, Beijing, China
24. IEEE International Conference on Cybernetics and Computational Intelligence (CyberneticsCom 2022), 16-18 June 2022, Malang, Indonesia.
25. IEEE Global Communication Conference: Communication & Information Systems Security (Globecom 2022:CISS), 4 – 8 December, Rio De Janeiro, Brazil.
26. The 23<sup>rd</sup> IEEE International Conference on High-Performance Switching and Routing (HPSR 2022), 6-8 June 2022, Taicang, Jiangsu, China.
27. The 14th IEEE International Conference on Internet of Things (iThings 2021), 06-08 December 2021, Melbourne, Australia.
28. IEEE Global Communication Conference: Communication & Information Systems Security (Globecom 2021:CISS) 7-11 December 2021, Madrid, Spain.
29. IEEE International Conference on Communication: SAC E-Health Track (ICC 2022:SAC-EH) 16-20 May 2022, Seoul, South Korea.
30. The 21<sup>st</sup> IEEE International Conference on Communication Technology (ICCT 2021), 13-16 October 2021, Tianjin, China.
31. The 10<sup>th</sup> IEEE International Conference on Communication, Networks, and Satellite (COMNETSAT 2020), 17-18 July 2021, Purwokerto, Indonesia.
32. The 6<sup>th</sup> EAI International Conference on Smart Grid and Innovative Frontiers in Telecommunications (Smart GIFT 2021), 12-13 August 2021, Virtual conference.
33. IEEE International Conference on Cloud and Big Data Computing (CBDDCom 2021), 23-26 August 2021, Calgary, Canada
34. The 9<sup>th</sup> IEEE International Conference on Communication, Networks, and Satellite (COMNETSAT 2020), 17-18 December 2020, Batam, Indonesia.
35. International Conference on IoT and its Applications (ICIA 2020), December 2020, Jamshedpur, India
36. The 20<sup>th</sup> IEEE International Conference on Communication Technology (ICCT 2020), 28-31 October 2020, Nanning, China.
37. The 13<sup>th</sup> IEEE International Conference on Internet of Things (iThings 2020), 02-06 November 2020, Rhodes Island, Greece.
38. IEEE International Conference on Communication: SAC E-Health Track (ICC 2021: SAC-EH) and COVI-COM Workshop, 14-18 June 2021, Montreal, Canada.
39. IEEE Globecom 2020 Communication & Information Systems Security Symposium (Globecom 2020: CISS), 7-11 December 2020, Taipei, Taiwan
40. IEEE International Conference on Cloud and Big Data Computing (CBDDCom 2020), 17-21 August 2020, Calgary, Canada
41. IEEE International Conference on Communication – Big Data Track (ICC 2020: BD Track), Dublin, Ireland, 7-11 June 2020.
42. The 11<sup>th</sup> IEEE International Symposium on UbiSafe Computing (UbiSafe 2019), Atlanta, USA, 14-17 July 2019.
43. The 6<sup>th</sup> International Symposium on Big Data Principles, Architectures, and Applications (BDAA 2019), Dublin, Ireland, 15–19 July 2019.
44. ACM International Workshop on Future Industrial Communication Networks (FICN) in conjunction with ACM MobiCom, New Delhi, India, November 2018
45. International Conference on Communication (ICC): SAC Symposium Smart Cities Track, Kansas City, MO, USA, 2018
46. IEEE International Smart Cities Conference (ISC 2017), Wuxi, China, 14-17 September 2017
47. The 86<sup>th</sup> IEEE Vehicular Technology Conference (VTC 2017), Toronto, Canada, 2017
48. International Conference on Intelligent, Secure, and Dependable Systems in Distributed and Cloud Environments (ISDD 2017), Canada, 2017
49. The 20<sup>th</sup> International Conference of Network-Based Information System (NbiS 2017), Canada, 2017.
50. International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2016), Bhubaneswar, Odisha, India, 2016.
51. The 4<sup>th</sup> International Conference on Intelligent Human-Computer Interaction (IHCI 2012), IIT Kharagpur, Kharagpur, India, 2012.

❖ **Short Term Course Organization:**

1. **Organizing team member:** International Summer and Winter Term (ISWT) course at the Department of Computer Science and Engineering, IIT Kharagpur, June 2015.
2. **Organizing team member:** Short Term Course on Object-Oriented Programming and Data Structure using C++, Department of Computer Science and Engineering, IIT Kharagpur, 2<sup>nd</sup> - 20<sup>th</sup> June 2014

#### ❖ **Administrative Duties:**

1. Computer Science UG Course Director at the University of Nottingham Ningbo China, 2023-Present
2. PGCHE faculty advisor of FoSE at the University of Nottingham Ningbo China, 2023 – Present.
3. The BCS Accreditation Coordinator at the University of Nottingham Ningbo China, 2023 – Present
4. School of Computer Science Learning Community Forum (LCF) Coordinator, University of Nottingham Ningbo China, 2023 - Present
5. Appointed Member of Faculty Education and Student Experience Committee (FESEC) at the University of Nottingham Ningbo China, 2022 - Present
6. Member of the Admission and International Relations Committee at the University of Nottingham Ningbo China, 2020 - Present
7. Member of EC Committee in the School of Computer Science at the University of Nottingham Ningbo China, 2020 - 2021
8. Held the post of Cashier at Vikram Sarabhai Residential Complex (VSRC) Hall, IIT Kharagpur, 2013 - 2014
9. Held the post of Block Representative at Vikram Sarabhai Residential Complex (VSRC) Hall, IIT Kharagpur, 2012 - 2013

#### ❖ **PhD Thesis Examiner:**

1. **External Examiner:** Padmini Mansingh, “Health Care Data Management Using Big Data Analytics”, Department of Computer Science & Engineering, Siksha ‘O’ Anusandhan (Deemed to be University), Odisha, India, 2024
2. **Internal Examiner:** Lincan Li, “Mobile Edge Cache Technique Under Radio Access Network for The Next Generation of Communication Networks”, Department of Electrical and Electronic Engineering, University of Nottingham Ningbo China, 2021

#### ❖ **Paper Review:**

1. IEEE Transactions on Network and Service Management
2. IEEE Transactions on Vehicular Technology
3. IEEE Transactions on Parallel and Distributed Systems
4. IEEE Transactions on Mobile Computing
5. IEEE Transactions on Network Science and Engineering
6. IEEE Transactions on Sustainable Computing
7. IEEE Systems Journal
8. IEEE Sensors Journal
9. IEEE Internet of Things Journal
10. IEEE Network
11. IEEE Communication Magazine
12. IEEE Internet of Things Magazine
13. Building and Environment (*Elsevier*)
14. Computer Networks (*Elsevier*)
15. Smart Health (*Elsevier*)
16. IET Wireless Sensor Systems
17. Multimedia Tools and Applications (*Springer*)
18. Wireless Personal Communications (*Springer*)
19. Telecommunication Systems (*Springer*)
20. Journal of Supercomputing (*Springer*)
21. International Journal of Communication Systems (*Wiley*)
22. Security and Communication Networks (*Wiley*)
23. Journal of Ambient Intelligence and Smart Environments (IOS Press)
24. International Journal of Communication Networks and Distributed Systems (*InderScience*)
25. Photonic Network Communications
26. International Journal of Engineering Business Management
27. Journal of Mobile Multimedia (*River Publisher*)
28. IEEE Healthcom, 2023
29. IEEE Globecom, 2020
30. International Conference on Mining Intelligence and Knowledge Exploration (*MIKE*), 2013
31. IEEE Students' Technology Symposium (IEEE *TechSym*), 2014, 2016
32. IEEE International Conference on Communication (*ICC*), 2015, 2018, 2020, 2022, 2023, 2024, 2025



33. IEEE Vehicular Technology Conference (VTC), 2016
34. IEEE International Conference on Cyber-Physical and Social Computing (CPSCoM), 2019

## ❖ Book Review

1. The seventh edition of “Database Systems: A Practical Approach to Design, Implementation, and Management” by Thomas Connolly and Carolyn Begg, Pearson Global Editions

## Students

### ❖ PhD Students:

#### ➤ Pursuing

1. Ximing Zhang, "Exploring an optimal security mechanism for ubiquitous V2X connections", School of Computer Science, University of Nottingham Ningbo China.
2. Joshua Lai, “Interoperability in Wearable Sensor Networks”, School of Computer Science, University of Nottingham Ningbo China.
3. Wenzhuo Lyu, “Development of an Efficient Plug-n-Play and Real-Time Remote Health Monitoring System”, School of Computer Science, University of Nottingham Ningbo China
4. Chenyu Yang, “Resource Allocation in Track Platooning”, Department of Electrical and Electronic Engineering, University of Nottingham Ningbo China
5. Ningyuan Chen, “Development of NDN-based Secure Communication Model for Vehicular Networks Using Blockchain”, Department of Electrical and Electronic Engineering, University of Nottingham Ningbo China
6. Qinglin Mao, “Text Image Inpainting for Recognition”, School of Computer Science, University of Nottingham Ningbo China

### ❖ Master Thesis Students:

#### ➤ Completed

1. Cheng Yan, "Developing a data secure postal system using Hyperledger Fabric smart contracts", School of Computer Science, University of Nottingham, UK, 2023 - 2024
2. Lihong Wei, "Optimization and Performance Evaluation of Dynamic Threshold-Based Handover Mechanism in Intelligent Transportation Systems", School of Computer Science, University of Nottingham, UK, 2023 - 2024
3. Wenchao Xia, "Lightweight Consensus Algorithms and the Layered Blockchain architecture applied in optimising for Resource-Constrained Devices", School of Computer Science, University of Nottingham, UK, 2023 – 2024
4. Zongzhe Li, “Blockchain-based secure and trustworthy Postal System”, School of Computer Science, University of Nottingham, UK, 2022 - 2023
5. Ce Liu, “Blockchain-Based Secure NDN framework for Remote Health Monitoring System”, School of Computer Science, University of Nottingham, UK, 2022 - 2023
6. Hao Li, “Optimization Strategies and Performance Evaluation of Health Monitoring Systems based on Named Data Networking (NDN) via Edge Intelligence”, School of Computer Science, University of Nottingham, UK, 2022 - 2023
7. Shangqi Yang, “Designing an Innovative Intelligent Transportation Model Based on Digital Twin and Cyber-Physical Systems”, School of Computer Science, University of Nottingham, UK, 2022 - 2023
8. Xuesong Zeng, “EIHR Management System Based on Blockchain and IPFS”, 2022 - 2023
9. Shuxin Feng, “Intelligent Traffic Prediction System by Combining Weather and Road Condition Information: a deep learning-based approach”, School of Computer Science, University of Nottingham, UK, 2021 - 2022
10. Ayushman Sanyal, “Architecture for the deployment of C-V2X technology for different landscape requirements”, School of Computer Science, University of Nottingham, UK, 2021 - 2022
11. Daiyaan Dharsey, “Development of a Blockchain-Based Electronic Patient Records (EPR) system with less vulnerable endpoints using asymmetric encryption and hashing”, School of Computer Science, University of Nottingham, UK, 2021 - 2022
12. Harri Prasad, “Blockchain-Based Secure And Trustworthy Data Communication Model For Internet Of Things”, School of Computer Science, University of Nottingham, UK, 2020 - 2021

### ❖ Bachelor Thesis Students:

#### ➤ Completed

1. Feiyang Sun, “ $\beta$ FSCM: An Enhanced Food Supply Chain Management System Using Hybrid Blockchain”, School of Computer Science, University of Nottingham Ningbo China, 2023-24
2. Hangqi Wan, “Development of a Dynamic NDN Naming Scheme for Efficient and Fast FIB Lookup to Improve the Network Performance”, School of Computer Science, University of Nottingham Ningbo China, 2023-24
3. Maksim Kozlov, “Blockchain Consensus Protocol for Resource Constrained Internet of Things (IoT) Devices”, School of Computer Science, University of Nottingham Ningbo China, 2023-24
4. Puttipatt INGKASIT, “Development of an Efficient Control System for Smart Home”, School of Computer Science, University of Nottingham Ningbo China, 2023-24
5. Yuanli Zhu, “Living Cost Analysis Based Accurate Salary Estimation Scheme by Using BigData Technique”, School of Computer Science, University of Nottingham Ningbo China, 2023-24
6. Haoran Cheng, “Development of an integrated architecture of Programmable Switches and Sketch Abstractions for Detections of Distributed Denial-of-Services”, School of Computer Science, University of Nottingham Ningbo China, 2022-23
7. Zhuoran Bi, “Real-Time Blood Glucose Prediction and Hypoglycemia Detection for Diabetic Patients Using Multi-model Machine Learning Technique”, School of Computer Science, University of Nottingham Ningbo China, 2022 - 23
8. Tianyi Ma, “Mental Health Assessment and Disease Prediction through Combination of Facial Expression and Voice”, School of Computer Science, University of Nottingham Ningbo China, 2022-23
9. Yujie Chen, “A Blockchain-based Decentralised Web Hosting System using Peer-to-Peer File-Sharing Networks”, School of Computer Science, University of Nottingham Ningbo China, 2022-23
10. Li-Kai WU, “Blockchain-based Fake Product Identification System”, School of Computer Science, University of Nottingham Ningbo China, 2021-22
11. Longwen HU, “Design of Blockchain-based Secure Health Status Monitoring System Using Decentralized Machine Learning Technology”, School of Computer Science, University of Nottingham Ningbo China, 2021-22
12. Dongchi Li, “B-Spot: Blockchain and Steganography based Robust and Secure Photo Transmission Mechanism”, School of Computer Science, University of Nottingham Ningbo China, 2020-21
13. Xiangning LIANG, “Robust and Secure File Transmission Through Video Streaming Using Steganography and Blockchain”, School of Computer Science, University of Nottingham Ningbo China, 2020-21
14. Zhengrui Xue, “Identification of Fake Images on Social Media Platforms Using Big Data Analytics”, School of Computer Science, University of Nottingham Ningbo China, 2020-21
15. Zhongyi Wang, “Identifying Covid-19 Fake News Using Deep Learning”, School of Computer Science, University of Nottingham Ningbo China, 2020-21
16. Zhenbang YAN, “GUI based Network Simulator”, School of Computer Science, University of Nottingham Ningbo China, 2020-21
17. Zhao Peng, “Activity-based home appliance control system”, School of Computer Science, University of Nottingham Ningbo China, 2019-20

## ❖ Group Project Students

### ➤ Completed

1. Bokai Zhang, Xinyi Song, Su Yang, Francesco Tedjo, Xinran Jiang, “Accurate Student Evaluation of Teaching System”, School of Computer Science, University of Nottingham Ningbo China, 2023 - 24
2. Chongpo Shao, Jianing Wu, Yuanli Zhu, Feiyang Sun, Hongman Li, Yaru He, “Find a Doctor”, School of Computer Science, University of Nottingham Ningbo China, 2022 - 23
3. Yichi Zhang, Chengyue Pan, Baizhen Lin, Kunming Wang, and Tianshu Ye, “Feedback Analysis Based Product Rating System”, School of Computer Science, University of Nottingham Ningbo China, 2021 – 22
4. Haowen Zheng, Honghao Zeng, Tianqi Xia, Boyuan Ye, Yuhua Guo, Zeyu Wang, “Epidemic disease control using the Internet of Things and Big Data analytics”, School of Computer Science, University of Nottingham Ningbo China, 2020 - 21.
5. Xiaoman Ding, Xiaoning Ma, Yunzhe Dong, Minxiao Li, Yixuan Wang, Yixuan Li, “Plug-n-Play Secure Remote Health Monitoring System”, School of Computer Science, University of Nottingham Ningbo China, 2019 - 20.

## ❖ Internship Project Students

### ➤ Completed

1. Zhihang Zhu and Yiran Mang, “Recommender System for Healthcare”, School of Computer Science, University of Nottingham Ningbo China, March - June 2022

2. Tianyi Ma and Chenyu Yang, "Research and Development of Trust-Centric and Attack-Centric Recommender Systems", School of Computer Science, University of Nottingham Ningbo China, March - June 2022
3. Xinyi Wang and Yifei Miao, "Recommender System Applications", School of Computer Science, University of Nottingham Ningbo China, March - June 2022
4. Lin Chen, Weixue Sheng, "An efficient technique for identification of cache pollution attack in NDN-based remote health monitoring system using rank comparison", School of Computer Science, University of Nottingham Ningbo China, February-August 2021
5. Jiayi Shi, Kewei Chen, "DMACN - A Dynamic Multi-Attribute Caching Mechanism for NDN-Based Remote Health Monitoring System", School of Computer Science, University of Nottingham Ningbo China, February-August 2021.
6. Rubin Chen, Yukai Qian, "Efficient Technique for Real-time Communication Between Doctor and Patients in a NDN based Remote Health Monitoring System", School of Computer Science, University of Nottingham Ningbo China, February-August 2021.
7. Hanyu Su, Siqi Yang, Yuning SUN, Hongru ZHAO, "Estimation of salary increment of employees in an organization by living cost analysis using BigData", School of Computer Science, University of Nottingham Ningbo China, June-August 2021
8. Leyang Hu, Yichen Huang, "An Integrated Framework for a Single Device to Combine Face Recognition and Covid-19 Detection Using Thermal Infrared Imagery", School of Computer Science, University of Nottingham Ningbo China, June-August 2021
9. Yihan Zhang, Xiyu Du, Peiyu Wang, " $\beta$ FSCM: An Enhanced Food Supply Chain Management System Using Hybrid Blockchain", School of Computer Science, University of Nottingham Ningbo China, June-August 2021
10. Ruibin Chen, Yachen Zhang, Yichen Fei, "WLEACH-CK: Weighted K-Means Based LEACH-C Algorithm for Cluster Head Selection", School of Computer Science, University of Nottingham Ningbo China, June-August 2020
11. Jiayi Shi, Weixue Sheng, "A Novel Framework for Predicting the Spread of COVID-19 by Contact Tracing through Smartphone", School of Computer Science, University of Nottingham Ningbo China, June-August 2020.
12. Zhicheng Song, "Name-Signature Lookup System: A Security Enhancement to Named Data Networking", School of Computer Science, University of Nottingham, UK, June-August 2020
13. Shanglun Wu, Yujie Yuan, "Lightweight Verification and Fine-grained Access Control in Named Data Networking Based on Schnorr Signature and Hash Functions", School of Computer Science, University of Nottingham Ningbo China, June-August 2020.
14. Donglin Jiang, Zhihui Zhang, "Efficient Cache Replacement for High Availability of Data Content from Content Store in An NDN Node Based on LSTM and Knowledge Distillation", School of Computer Science, University of Nottingham Ningbo China, June-August 2020.
15. Yunuo Zhao, Hao Jiang, "Optimizing Open Shortest Path First Routing Calculation for NDN Using Johnson Algorithm", School of Computer Science, University of Nottingham Ningbo China, June-August 2020.

## Collaborations

1. Prof. Hao Wang, Professor, Xidian University, China
2. Dr. Ayan Mondal, Assistant Professor, Department of Computer Science and Engineering, Indian Institute of Technology Indore, India
3. Dr. Arun Kumar, Assistant Professor, Department of Computer Science and Engineering, National Institute of Technology Rourkela, Odisha, India.
4. Dr. G. G. Md. Nawaz Ali, Assistant Professor, Department of Computer Science and Information Systems, Bradley University, IL, USA.
5. Dr. Monideepa Roy, Associate Professor, School of Computer Engineering, Kalinga Institute of Industrial Technology, Odisha, India
6. Mr. Minyi Li, Project Leader, Deqing Ispatial Ltd. co, China

## Countries Visited

England, Singapore, Malaysia, Indonesia, Philippines, Norway, Czech Republic, Austria, Switzerland, Italy, Netherlands, Belgium, France, Spain, China

## Personal Details

**Date of Birth:** 14<sup>th</sup> March, 1983.

**Sex:** Male.

**Marital Status:** Married

**Nationality:** Indian.

**Languages Known:** Bengali (Mother tongue), English (Proficient) & Hindi (Proficient).

**Hobbies:** Reading storybooks, watching films.