

Dr Punyasha Chatterjee
School of Mobile Computing & communication

Education

Degree	Year	University
Ph.D.	2018	Calcutta University
M.Tech	2005	Calcutta University
B.Tech	2003	Calcutta University

Teaching Experience

Name Of The Institution	Position Held	Period
Jadavpur University	Associate Professor	2020, November to Till Date
Jadavpur University	Assistant Professor	2012, November to 2020, October
Govt. College of Engineering & Textile Technology, Serampore	Assistant Professor	2007, March to 2012, October

Field of Specialization: Wireless Sensor Networks, Distributed Computing, Internet of Things

Courses Taught/Teaching

Wireless Sensor Networks, Mobile Ad-Hoc Networks, Wireless Mobile Protocols

Research Area : Internet of Things, Pervasive computing

Conference Papers Published

1. **P. Chatterjee**, P. Majumder, A. Debnath and S. K. Das, "*Distributed Decision Making for V2V Charge Sharing in Intelligent Transportation Systems*," 19th Annual IEEE International Conference on Sensing,

Communication, and Networking (SECON), 2022, pp. 506-514, doi: 10.1109/SECON55815.2022.9918576.

2. Ganguli, R., Jakir Hossain Molla, M., **Chatterjee, P.**, Adhikari, S., Saha, S., Sen, S. (2022). *A Generic Modelling on Neo4j to Recommend Students for Suitable Job Sectors Based on Different Skill Set Parameters*. In: Peng, S.L., Lin, C.K., Pal, S. (eds) Proceedings of 2nd International Conference on Mathematical Modeling and Computational Science. Advances in Intelligent Systems and Computing, vol 1422. Springer, Singapore. https://doi.org/10.1007/978-981-19-0182-9_19
3. Majumder, P., **Chatterjee, P.** (2022). *Constrained Optimization-Based Routing for Multipath and Multihop Propagation in WSN*. In: Pundir, A.K.S., Yadav, N., Sharma, H., Das, S. (eds) Recent Trends in Communication and Intelligent Systems. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-19-1324-2_9
4. Dutta, A., Sinha, V., **Chatterjee, P.**, Debnath, N.C., Sen, S. (2022). *A Multidimensional Data Mining Approach for Video Analysis and Ranking System*. In: Borah, S., Mishra, S.K., Mishra, B.K., Balas, V.E., Polkowski, Z. (eds) Advances in Data Science and Management . Lecture Notes on Data Engineering and Communications Technologies, vol 86. Springer, Singapore. https://doi.org/10.1007/978-981-16-5685-9_59
5. Dey, M.T., **Chatterjee, P.** (2022). *Covid Waste Management Using IoT: A Smart Framework*. In: Fong, S., Dey, N., Joshi, A. (eds) ICT Analysis and Applications. Lecture Notes in Networks and Systems, vol 314. Springer, Singapore. https://doi.org/10.1007/978-981-16-5655-2_88
6. Majumder, P., Majumder, T., **Chatterjee, P.**, Shrestha, S. (2022). *Dual-Message Compression with Variable Null Symbol Incorporation on Constrained Optimization-Based Multipath and Multihop Routing in WSN*. In: Nagar, A.K., Jat, D.S., Marín-Raventós, G., Mishra, D.K. (eds) Intelligent Sustainable Systems. Lecture Notes in Networks and Systems, vol 334. Springer, Singapore. https://doi.org/10.1007/978-981-16-6369-7_31
7. Majumder, T., **Chatterjee, P.** (2022). *Localization in Wireless Sensor Networks Using Link-Quality Values: A Real Test-Bed Implementation*. In: Kumar, A., Senatore, S., Gunjan, V.K. (eds) ICDSMLA 2020. Lecture Notes in Electrical Engineering, vol 783. Springer, Singapore. https://doi.org/10.1007/978-981-16-3690-5_28
8. Mondal, M., Chaudhuri, S.G., **Chatterjee, P.** (2021). *Uniform Grid Formation by Asynchronous Fat Robots*. In: Mandal, J.K., Mukhopadhyay, S., Unal, A., Sen, S.K. (eds) Proceedings of International Conference on Innovations in Software Architecture and Computational Systems. Studies in Autonomic, Data-driven and Industrial Computing. Springer, Singapore. https://doi.org/10.1007/978-981-16-4301-9_8
9. Mamud S., Bandyopadhyay S., Chatterjee P., Bhandari S., Chakraborty N. (2021) DietSN: A Body Sensor Network for Automatic Dietary Monitoring System. In: Sharma N., Chakrabarti A., Balas V.E., Bruckstein A.M. (eds) Data Management, Analytics and Innovation. Lecture Notes on Data Engineering and Communications Technologies, vol 70. pp 367-381 Springer, Singapore, August 2021.
10. P. Majumder, **P. Chatterjee** and K. Sinha, "Run Length Distribution based Block Coding Scheme for Sustainable IoT Applications," 2020 2nd PhD Colloquium on Ethically Driven Innovation and Technology for Society (PhD EDITS), 2020, pp. 1-2, doi: 10.1109/PhDED-ITS51180.2020.9315302.
11. Mamud S., Chatterjee Punyasha, Bandyopadhyay S., Bhandari S., Automated Dietary Monitoring System: A Novel Framework, ICT Systems and Sustainability. Advances in Intelligent Systems and Computing, vol 1270, Tuba M., Akashe S., Joshi A. (eds), pp 535-542, Springer Singapore, Print ISBN 978-981-15-8288-2, 15 December 2020
12. Mitra Tithi Dey, Punyasha C., Amlan C., Smart Waste Monitoring using Internet of Things, 4th International Conference on Data Management, Analytics & Innovation

(ICDMAI 2020), January 2020, Delhi, India, Data Management, Analytics and Innovation, pp. 419-433, Publisher Springer, Singapore, Print ISBN 978-981-15-5615-9

13. P.Mandal, A.Debnath, P.Chatterjee: An Intelligent Highway Traffic Management System for Smart City, Computing Conference 2019, July 2019, London, United Kingdom, Advances in Intelligent Systems and Computing, vol 997, pp 1-10, Springer, Print ISBN 978-3-030-22870-5.
14. P.Mandal, M.K.Rana, P.Chatterjee: ns-3 Implementation of Network Mobility Basic Support (NEMO-BS) Protocol for Intelligent Transportation Systems, 3rd International Conference of Data Management, Analytics and Innovation (ICDMAI 2019), Malaysia, January, 2019, Advances in Intelligent Systems and Computing 2019, vol 1042. pp 633-642, Springer, Print ISBN 978-981-32-9948-1
15. Md Faruck, P. Chatterjee: Air Pollution Detection Using Multisensor Data Fusion: Proceedings of the ACM Workshop Program of the 19th International Conference on Distributed Computing and Networking(ICDCN), Indian Institute of Technology (BHU), India, January, 2018, Article No. 24, ACM ISBN 978-1-4503-6397-6/18/01.
16. R. Das, P. Chatterjee: Securing Data Transfer in IoT Employing an Integrated Approach of Cryptography & Steganography, ACM proc. of International Conference on High Performance Compilation, Computing and Communications (HP3C-2017), pp. 17-22, March, 2017, Kuala Lumpur, Malaysia, ISBN 978-1-4503-4868-3/17/03
17. M. M. S. Sarwar, P. Chatterjee: Optimal Sink Placement in Wireless Sensor Networks to Increase Network Performance, International Conference on Industry Interactive Innovations in Science, Engineering and Technology (I3SET 2K16), Springer, Singapore, LNNS, Vol. 11, pp. 411-421, Kolkata, India, Print ISBN 978-981-10-3952-2.
18. S. Biswas, R. Das, P. Chatterjee: Energy Efficient Connected Target Coverage in Multi-hop Wireless Sensor Networks, International Conference on Industry Interactive Innovations in Science, Engineering and Technology (I3SET 2K16), Springer LNNS, Singapore, Vol. 11, pp. 423- 433, Kolkata, India, Print ISBN 978-981-10-3952-2.
19. P. Chatterjee: On Corona-based Non-uniform Node Deployment to Maximize Lifetime in Multi-Hop Wireless Sensor Networks, Workshop on Large Scale Complex Network Analysis (LSCNA 2015), pp. 51-54, Indian Statistical Institute, Kolkata, India, Publication date : 2015/12/19, Pages 55, Academic Publishers.
20. P. Chatterjee, N. Das: Multiple sink deployment in multi-hop wireless sensor networks to enhance lifetime, Applications and Innovations in Mobile Computing (AIMoC-2015), IEEE Xplore, pp. 48-54, India.

21. P. Chatterjee, N. Das: Coverage Constrained Non-Uniform Node Deployment in Wireless Sensor Networks for Load Balancing, AIMoC-2014, IEEE Xplore, pp. 126-132, India, Feb 2014.
22. P. Chatterjee, N. Das: Distributed Data Gathering with Graded Node Distribution in Sensor Networks to Maximize Lifetime, 25th International Conference on Advanced Information Networking and Applications (AINA-2011), IEEE Xplore, pp. 435-442, Singapore, March, 2011.
23. P. Chatterjee: A Study on Efficient Data Gathering to Maximize Lifetime in Wireless Sensor Networks, Ph.D. Forum Publication, ICDCN 2010, pp. 9-12, India.
24. P. Chatterjee, N. Das: A Cross-Layer Distributed TDMA Scheduling for Data Gathering with Minimum Latency in Wireless Sensor Networks, 1st International Conference on Wireless Communication, Vehicular Technology, Information Theory and Aerospace & Electronic Systems Technology (Wireless VITAE'09), IEEE Xplore, pp. 813-817, Denmark, May 2009.
25. P. Chatterjee, N. Das: A Distributed Algorithm for Load-Balanced Routing in Multihop Wireless Sensor Networks, 9th International Conference on Distributed Computing and Networking (ICDCN 2008), LNCS 4904, pp. 332-338, India, Jan 2008.

Journal:

1. **P. Chatterjee**, S. C. Ghosh, N. Das: *Load Balanced Coverage with Graded Node Deployment in Wireless Sensor Networks*, IEEE Transactions on Multi-Scale Computing Systems, Vol. 3, No. 2, pp. 100-112, Dt. of Publication 22/02/2017.
2. P. K. Pal, **P. Chatterjee**: *A Survey on TDMA based MAC Protocols for Wireless Sensor Network*, International Journal of Emerging Technology and Advanced Engineering, Vol. 4, Iss. 6, June 2014.
3. Anjan Dutta, Runa Ganguli, **Punyasha Chatterjee**, Narayan C Debnath, Soumya Sen, *Improvement of Apriori Algorithm for Missing Itemset Identification and Faster Execution*, Publication date 2021/6, International Journal of Computers and Their Applications, Volume 28, Issue 2, Pages 76-83, Publisher ISCA (International Society for Computers and Their Applications)

Book chapter Publications:

1. Mitra Tithi Dey, Punyasha Chatterjee, *Challenges and Opportunities of Smart Solid Waste Management: A Review*, Horizons in Computer Science Research, Volume 20, Thomas S. Clary (Editor), pp 61-109, Nova Science Publishers, NY USA, ISBN: 978-1-53619-103-5, February 10, 2021
2. **P. Chatterjee**, N. Das: On Load-Balanced Data Gathering for Lifetime Maximization in Wireless Sensor Networks, Book "Wireless Sensor Networks", ch.9, pp. 137-160, NOVA Sc. Publishers, NY, USA, ISBN : 978-1-61728-125-4, 2010.

Awards

Awarded By	Award Name	Year
Society for Data Science (S4DS) In ICDMAI 2020	Best Paper	2020

MASTER Thesis Guidance

Name Of The Scholar	Title Of The Thesis	Co-Super- viser	Year
MANASHI KUNDU	SMART WASTE MANAGEMENT USING EDGE COMPUTING		2022
BANHI ROY	DECISION MAKING FOR EV TO EV CHARGE SHARING USING BIPARTITE MATCHING		2022
MANORANJAN PRAMANIK	MINIMIZATION OF RESOURCE ALLOCATION FOR D2D COMMUNICATION IN 5G		2022
TANMOY CHOWDHURY	RISK-AWARE PATH PLANNING FOR UAV FLYING BEYOND VISUAL LINE OF SIGHT IN UAV-WSN-BASED MONITORING SYSTEM		2022
NILANJAN CHAKRABORTY	"DEEP LEARNING-BASED APPROACH FOR FOOD TYPE IDENTIFICATION BY ANALYSING CHEWING SOUNDS IN AUTOMATIC FOOD INTAKE MONITORING SYSTEM".		2022
Ujjwal Mandal	Food type identification by analysing Chewing sounds in Automatic Food Intake Monitoring System: A machine learning based approach		2021
Pooja Moran	Vehicle-to-Vehicle(V2V) charge transfer for Electric Vehicles(EV) in Vehicular Adhoc Network (VANET)		2021
Jishnu Mondal	Eating Behaviour Analysis using Smart Wrist Band		2021

Agnisuddha Mandal	Energy-Efficient Path Planning for Unmanned Aerial Vehicle (UAV)-aided Wireless Sensor Network (WSN) Monitoring		2021
Samiul Mamud	Automatic Dietary Monitoring System using Wearable Sensors		2020
Suman Kanti Roy	Resource Allocation Approach for D2D Communication IN 5G	Dr. Sunirmal Khatua	2020
Niladri Sekhar Sarkar	Energy Aware Body Sensor Network for Automatic Dietary Monitoring System		2020
Nilanjan Chakraborty	Body Sensor Network for Automatic dietary Monitoring system		2020
Rituparna Maji	Target Coverage using Energy Harvesting Wireless Sensor Networks (EH-WSNs)		2019
Prasanta Mandal	An Intelligent transportation System for Smart City		2018
Jayanta Mahata	Outlier Detection in Wireless sensor Networks		2018
Md Faruck	Air Pollution Detection Using Multisensor Data Fusion		2017
Ria Das	Securing Data Transfer in IoT Employing an Integrated Approach of Cryptography and Steganography		2017
Mir Md Sajid Sarwar	MULTIPLE SINK PLACEMENTS IN WIRELESS SENSOR NETWORKS		2016
Rakesh Mallik	Application of Internet of Things: Precision Agriculture		2016
Sonali	COVERAGE IN 3D WIRELESS SENSOR NETWORK		2016
Suchismita Dalal	SINK MOBILITY IN WIRELESS SENSOR NETWORK		2015
Milan Sarkar	SIMULATION STUDY OF MULTIPLE SINK PLACEMENT FOR WIRELESS SENSOR NETWORKS USING QUALNET		2015
Swagata Biswas	ENERGY EFFICIENT TARGET COVERAGE IN WIRELESS SENSOR NETWORKS		2015
Pijush Kumar Pal	SIMULATION STUDY OF MAC LAYER AND ROUTING PROTOCOLS FOR WIRELESS SENSOR NETWORKS USING QUALNET		2014
Prithish Kandar	Cluster Based Routing Protocols In WSN		2014
Debdut Bhattacharjee	Coverage Problem in Wireless Sensor Network		2014

Project Works:

Project Title	Worked As	Funding Agency	Amount	Duration	Period	Status
e-Dietary Monitoring System using Pervasive Sensing and Machine Learning for children in rural areas	Principal Investigator	RUSA 2.0	5 lakhs	1 year	2019-20	Completed
Developing Localized Algorithms in Pervasive Computing Environments						Completed

Invited Lectures:

Title	Organised By	Venue	Year
Applications of AI in Flying Robots	Narula Institute of Technology	Narula Institute of Technology	2022
IoT in Precision Farming & food Manufacturing	Guru Nanak Institute of Engineering	Online	2021
IoT and its Applications	Guru Nanak Institute of Engineering	Online	2020
Introduction to Internet of Things	Netaji Nagar Day College	Netaji Nagar Day College	2019
IoT & Smart City	University of Engineering & Management	University of Engineering & Management	2019
Applications of Internet of Things in Day-to-Day Life	MCKV Institute of Engineering	MCKV Institute of Engineering	2018
Energy Efficient Data Gathering in Green Wireless Sensor Networks	Department of Information Technology, JU	Department of Information Technology, JU	2018

<i>Sensor Network</i>	Budge Budge Institute of Technology	Budge Budge Institute of Technology	2013
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Membership Of Learned Societies:

1. Senior Member IEEE
2. IEEE Sensors Council member
3. IEEE Computer Society Member
4. Member ACM

Orientation/Refresher/QIP Course Attended/Organized :

Program Name	Organised By	Venue	Year
Product Development & Industrial Research -2020	R & D, Mechanical Engineering Department, Government College of Engineering, Aurangabad	Online	2020
Paradigm of Open Source Software 2018 (POSS 2018)	Prof Nandini Mukherjee & Dr Punyasha Chatterjee at Jadavpur University	Jadavpur University	2018