

Sukhwinder Sharma

Assistant Professor
Department of Computer Science & Engineering
Baba Banda Singh Bahadur Engineering College
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Research Interests

Wireless Sensor Networks, Wireless Communications, Internet of Things, Open Source Technologies

Education

- 2012-2019 Doctor of Philosophy in Computer Science & Engineering
IKG Punjab Technical University, Punjab, India
Dissertation: *Energy Efficient Data Collection Techniques in Wireless Sensor Networks*
Advisors: Dr. Rakesh Kumar Bansal, Dr. Savina Bansal
- 2007-2010 Masters of Technology in Computer Engineering
Punjabi University, Punjab, India
Dissertation: *Measurement and Analysis of Quality of Service in WiMAX Networks*
Advisor: Dr. Sukhwinder Singh Sran
- 2002-2005 Bachelor of Technology in Information Technology (Lateral Entry) **with Honors**
Kurukshetra University, Haryana, India
Project: *Linux Based Server Configuration*
Advisor: Prof. Bhupinder Kaur

Examination

- 2007 Graduate Aptitude Test in Engineering (GATE)
Information Technology
All India Rank 432

Professional Experience

- 2009-Present Assistant Professor
Department of Computer Science & Engineering
Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab, India
- 2007-2009 Lecturer
Department of Computer Science & Engineering
Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab, India
- 2006-2007 Lecturer
Department of Computer Science & Engineering
Dehradun Institute of Technology, Dehradun, Uttarakhand, India
- 2005-2006 Lecturer
Department of Computer Science & Engineering
Jind Institute of Engineering & Technology, Jind, Haryana, India

Journal Publications

- J.21 G. Kaur, **S. Sharma**, "*iEDDEEC: Improved Enhanced Developed Distributed Energy Efficient Clustering Protocol for Heterogeneous Wireless Sensor Networks*" in International Journal of Computer Sciences and Engineering, Vol. 6(6), pp. 27-36, 2018.
- J.20 **S. Sharma**, R.K. Bansal, S. Bansal, "*Heterogeneity-aware Energy-efficient Clustering (HEC) Technique for WSNs*" in KSII Transactions on Internet and Information Systems, Vol. 11(4), pp. 1866-1888, 2017 (SCIE, Impact Factor: 0.711).
- J.19 **S. Sharma**, R.K. Bansal, S. Bansal, "*Heterogeneity Analysis and Threshold Tuning for HEC Technique*", in International Journal of Engineering Technology Science and Research, Vol. 4(7), pp. 884-888, 2017.
- J.18 **S. Sharma**, R.K. Bansal, S. Bansal, "*Energy Efficient Clustering Techniques for Heterogeneous Wireless Sensor Networks: A Survey*" in Journal of Mobile Computing, Communications & Mobile Networks, Vol. 3(1), pp. 1-9, 2016.
- J.17 G.S. Dhanjal, **S. Sharma**, P. Kaur, "*Gravity based Punjabi Question Answering System*" in International Journal of Computer Applications", Vol. 147(3), pp. 30-35, 2016.
- J.16 S. Kaur, **S. Sharma**, "*Load Balancing in Cloud Computing with Enhanced Optimal Cost Scheduling Algorithm*" in Imperial Journal of Interdisciplinary Research, Vol. 2(9), pp. 1460-1466, 2016.
- J.15 J. Kaur, **S. Sharma**, "*Genetic Algorithm based Stable Election Protocol for WSN*" in International Journal of Computer Science & Engineering, Vol. 3(10), pp. 6-10, 2015.
- J.14 G.S. Dhanjal, **S. Sharma**, "*Advancements in Question Answering Systems towards Indic Languages*" in International Journal of Research in Computer Science, Vol. 5(1), pp. 15-26, 2015.
- J.13 S. Kaur, **S. Sharma**, "*Detection of Phishing Websites using the Hybrid Approach*" in International Journal for Advance Research in Engineering and Technology, Vol. 3(8), pp. 54-57, 2015.
- J.12 S. Kaur, **S. Sharma**, "*Performing Efficient Phishing Web Page Detection*" in International Journal of Computer Sciences and Engineering, Vol. 3(7), pp. 52-56, 2015.
- J.11 S. Kaur, **S. Sharma**, A. Singh, "*Cyber security: Attacks, Implications and Legitimations across the Globe*" in International Journal of Computer Applications, Vol. 114(6), pp. 21-23, 2015.
- J.10 N. Sharma, **S. Sharma**, "*Eliminating Black Hole Attack with Authenticated Diffie Hellman Algorithm*" in International Journal for Advance research in Engineering and technology, Vol. 3(XII), pp. 5-8, 2015.
- J.9 H. Kaur, **S. Sharma**, M. Goyal, "*Multi-hop Routing SEP (MR-SEP) for Clustering in Wireless Sensor Network*" in International Journal of Engineering Technology, Management and Applied Sciences, Vol. 2(3), pp. 54-65, 2014.
- J.8 Disha, **S. Sharma**, K. Singh, "*Security Implementation upon Wireless Network using the WPA2 Enterprise*" in International Journal of Research in Information Technology, Vol. 2(3), pp. 676-682, 2014.
- J.7 M. Pawar, **S. Sharma**, "*Review on Data Security Issues and Data Security Models in Cloud Computing*" in International Journal of Research in Information Technology, Vol. 2(4), pp. 107-111, 2014.
- J.6 J. Singh, **S. Sharma**, "*Efficient ZRP Routing Protocol*" in International Journal of Engineering Sciences Paradigms and Researches, Vol. 16(1), pp. 28-34, 2014.
- J.5 J. Singh, **S. Sharma**, "*A Survey on Routing Protocol in MANET*" in Journal of International Academic Research for Multidisciplinary, Vol. 2(6), pp. 334-342, 2014.

- J.4 P. Kaur, **S. Sharma**, “*Comparison of Energy-Efficient Data Acquisition Techniques in WSN through Spatial Correlation*” in International Journal of Engineering Research and Applications, pp. 26-30, 2013.
- J.3 S. Kamal, **S. Sharma**, “*Scheduling of Precedence Constrained Task Graphs on Multiprocessor Systems*” in International Journal of Computer Science and Communication, Vol. 3(1), pp. 233-240, 2012.
- J.2 R. Singla, **S. Sharma**, G. Singh, “*Performance Evaluation of Routing Protocols In VANETs using TCP Variants on Omnet++ Simulator*” in International Journal of Engineering Research and Applications, Vol. 2(5), pp. 1725-1731, 2012.
- J.1 Disha, **S. Sharma**, K. Singh, “*Comparison of Wireless Security Protocols WEP and WPA2*” in International Journal of Computing and Corporate Research, Vol. 2(6), pp. 1-3, 2012.

Conference Publications

- C.4 **S. Sharma**, R.K. Bansal, S. Bansal, “*Analysis of Heterogeneity Characteristics for Heterogeneous WSNs*” in Proceedings of 3rd International Conference on Next Generation Computing Techniques, Springer CCIS, Dehradun, India, Vol. 828, pp. 278-290, 2018 (Scopus, Impact Factor: 0.46).
- C.3 **S. Sharma**, R.K. Bansal, S. Bansal, “*Heterogeneity Analysis of Clustering Based Data Collection Techniques for WSNs*” in Proceedings of International Conference on Communication, Computing and Networking-2017, Chandigarh, India, pp. 386-391, 2017.
- C.2 **S. Sharma**, R.K. Bansal, S. Bansal, “*Issues and Challenges in Wireless Sensor Networks*” in Proceedings of IEEE International Conference on Machine Intelligence and Research Advancement, Katra, India, pp. 58-62, 2013.
- C.1 **S. Sharma**, S.S. Sran, “*Measurement and Analysis of Quality of Service in WiMAX Networks for Video Streaming using NS-3*”, in Proceedings of International Conference on Computer Engineering and Technology, Jodhpur, India, pp. F48-F54, November 2010.

Book Chapters

- B.2 **S. Sharma**, R.K. Bansal, S. Bansal, “*Design Issues in Energy Heterogeneous Wireless Sensor Networks*” in Advances in Wireless Communication and Mathematics, Twentyfirst Century Publications, India, pp. 52-55, 2018.
- B.1 **S. Sharma**, R.K. Bansal, S. Bansal, “*Energy-efficient Data Collection Techniques in Wireless Sensor Networks*” in Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications, CRC Press, Taylor & Francis, USA, pp. 275-296, 2016.

Thesis Supervised

- T.10 Gurwinder Kaur, Masters of Technology, 2018
iEDDEEC: improved Enhanced Developed Distributed Energy Efficient Clustering Protocol for Heterogeneous Wireless Sensor Networks
- T.9 Sandeep Kaur, Masters of Technology, 2017
Load balancing in Cloud Computing using Enhanced Optimal Cost Scheduling Algorithm
- T.8 Gursharan Singh Dhanjal, Masters of Technology, 2017
Gravity based Punjabi Question Answering System
- T.7 Nitika Sharma, Masters of Technology, 2016

Eliminating Black Hole Attack with Authenticated Diffie-Hellman Algorithm in Adhoc Networks

- T.6 Harpreet Kaur, Masters of Technology, 2014
Stable Election Protocol based Multi-hop Routing in Wireless Sensor Network (SEP-MR)
- T.5 Jasdeep Singh, Masters of Technology, 2014
Intelligent Delay Aware QoS Zone Routing Protocol in Mobile Ad-Hoc Networks
- T.4 Disha, Masters of Technology, 2014
QoS Aware Implementation of Security Techniques in WLAN
- T.3 Paramvir Kaur, Masters of Technology, 2013
Implementation of Energy-efficient Data Acquisition in WSN through Spatial Correlation
- T.2 Reetika Singla, Masters of Technology, 2012
Performance Evaluation of Routing Protocols in VANET using TCP Variants
- T.1 Shailza Kamal, Masters of Technology, 2012
Scheduling of Precedence Constrained Task Graphs on Multiprocessor Systems

Short Term Training Programs Attended

- S.24 *Internet of Things: Education Canvas* (09-20 November, 2019)
- S.23 *Python Programming* (22-23 March, 2018)
- S.22 *Effective Technical Writing using LaTeX* (03-07 July, 2017)
- S.21 *Wireless Networks through ICT* (22-26 May, 2017)
- S.20 *Big Data and Hadoop Fundamentals* (28-30 March, 2017)
- S.19 *Sensors in Everyday Life* (05 October, 2016)
- S.18 *Cloud Computing: Applications & Issues* (4-8 July, 2016)
- S.17 *Internet of Things* (02-04 June, 2016)
- S.16 *Machine Learning and Computational Intelligence* (25-29 May, 2015)
- S.15 *Realizing Wireless Sensor Networks using Simulators and Testbeds* (03-07 March, 2014)
- S.14 *LabVIEW and its Applications to Engineering Systems* (06-10 May, 2013)
- S.13 *Software Project & Process Management* (17-20 December, 2012)
- S.12 *Emerging WLAN Trends and D-LINK Mobility Solutions* (05 November, 2012)
- S.11 *Human Values and Professional Ethics* (23-25 August, 2012)
- S.10 *Wireless Networks and Network Simulator* (09-10 July, 2012)
- S.9 *Software Engineering Practices in Object Oriented Programming* (18-22 June, 2012)
- S.8 *Human Values and Professional Ethics* (22-29 June, 2011)
- S.7 *Dale Carnegie Faculty Empowerment Program* (19-23 July, 2010)
- S.6 *Wireless and WiMax Issues: Present Scenario* (05-16 July, 2010)
- S.5 *Secrets of Guru* (29 September -01 October, 2009)
- S.4 *Advanced Engineering Optimization Through Intelligent Techniques* (13-17 July, 2009)
- S.3 *Network Security* (12-16 May, 2008)
- S.2 *Linux* (21-25 November, 2005)
- S.1 *Linux System Administration & Networking* (05 July-14 August, 2004)

Invited Presentations

- P.1 *"Bridging the Standardization Gap"*, Invited for Presentation on Theme to World Telecommunication & Information Society Day at Engineers Bhawan, Chandigarh, India on 17 May, 2019.

Events Organized

- E.11 Zonal Coordinator, *IoT Challenge 2020* (06-07 February, 2020)
- E.10 Member of Registration Committee, *Faculty Development Program on Cyber Security and Big Data Analytics* (26 February-02 March 2018)
- E.9 Member of Hospitality Committee, *National Entrepreneurship Awareness Program* (27-29 September, 2017)
- E.8 Member of Technical Committee, *All India Seminar on Recent Innovations in Wireless Communication & Networking* (23-24 February 2017)
- E.7 Member of Organizing Committee, *IIT Bombay Spoken Tutorial Project* (03-04 November, 2016)
- E.6 Member of Advisory Committee, *Faculty Development Program on Soft Computing Techniques for Engineering Applications* (11-15 July, 2016)
- E.5 Member of Organizing Committee, *Faculty Development Program on Cloud Computing: Applications and Issues* (04-08 July, 2016)
Member of Registration Committee, *INSPIRE Internship Camp* (22-26 March, 2014)
- E.4 Member of Organizing Committee, *World Sikh Environment Day* (14 March, 2014)
- E.3 Member of Registration Committee, *INSPIRE Internship Camp* (09-13 February, 2013)
- E.2 Member of Registration Committee, *INSPIRE Internship Camp* (31 March - 04 April, 2012)
- E.1 Member of Registration Committee, *International Conference on Advancements in Computing and Communication* (23-25 February, 2012)

Service

- S.6 Training & Placement Coordinator, CSE Department, BBSB Engineering College, India
- S.5 NSS Coordinator, CSE Department, BBSB Engineering College, India
- S.4 Sports Coordinator, CSE Department, BBSB Engineering College, India
- S.3 Digital Marketing Coordinator, CSE Department, BBSB Engineering College, India
- S.2 Warden (Boys' Hostel), BBSB Engineering College, India
- S.1 Convener, Movie Club, BBSB Engineering College, India

Courses Taught

Under-graduate Level:

Computer Networks-I
Computer Networks-II
Network Programming
Network Operating System
Multimedia & its Applications
Asynchronous Transfer Mode
Web Designing
Entrepreneurship

Post-graduate Level:

Network Security
Advanced Computer Networks
Cryptography
Agile Software Development
Parallel Computing
Advanced Computer Architecture
Advanced Software Engineering
Business Ethics

Professional Memberships

- M.4 Member of *Association for Computing Machinery* (ACM)
- M.3 Life Member of *Institution of Engineers (India)* (IEI)
- M.2 Life Member of *Computer Society of India* (CSI)
- M.1 Life Member of *Indian Society for Technical Education* (ISTE)

Simulation Tools Used

- T.3 MatLAB
- T.2 Omnet++ Castalia
- T.1 Network Simulator 3 (ns-3)

Advanced Lab Setup

- L.2 *Internet of Things (IoT) Lab*: IoT Lab is equipped with different IoT boards, electronic components and sensors to provide a platform for under-graduate and post-graduate students to design, develop and implement project ideas for real life applications.
- L.1 *Wireless Sensor Network (WSN) Lab*: WSN lab having National Instruments Programmable gateways, nodes and sensors provides under-graduate and post-graduate students platform to implement wireless sensor network scenarios, by combining different types of nodes and gateways, to meet the unique needs of real applications.

References

- R.3 *Dr. Savina Bansal*
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- R.2 *Dr. Rakesh Kumar Bansal*
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- R.1 *Dr. Kanwalvir Singh Dhindsa*
Professor, BBSB Engineering College, India
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