

Dr. MANAS KHATUA

Assistant Professor (on contract)

Computer Science and Engineering

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RESEARCH INTERESTS

- Wireless Networks
- Network Security
- Wireless Ad-hoc & Sensor Networks
- Mobile Cloud Computing
- Internet-of-Things

EDUCATION

Ph.D., 2015

Indian Institute of Technology Kharagpur

Thesis: *Analysis of Collisions in Contention-Based Wireless Networks*

Adviser: Dr. Sudip Misra

Research Area: Wireless Networks

M. Tech. in Information Technology, 2006

Bengal Engineering and Science University, Shibpur

Thesis: *Gradient-based Sensor Protocol for Information via Negotiation in WSNs*

Adviser: Dr. Indrajit Banerjee

Area of Study: Wireless Sensor Network

Marks: 9.2/10

B. Tech. in Computer Science & Engineering, 2003

University of Kalyani

College: RCC Institute of Information Technology, Kolkata.

Project: *Design and Implementation of an Inventory Control System*

Adviser: A. K. Chandra, Regional Computer Centre, Kolkata

Marks: 75.06%

Higher Secondary in Pure Science, 1998

West Bengal Council of Higher Secondary Education

School: Narayangarh R. R. C. L. U. S. Niketan, West Bengal.

Marks: 74.40%

Secondary, 1996

West Bengal Board of Secondary Education

School: Narayangarh R. R. C. L. U. S. Niketan, West Bengal.

Marks: 77.77%

TEACHING
EXPERIENCE

Indian Institute of Technology Jodhpur, India

Assistant Professor, Dept. of Computer Science and Engineering
28th December 2016 to Till Date

Course Taught:

- CS 321 Computer Networks (Jan-May'17)
- CS 311 Data Communication (Summer'17)[shared with Dr. V. R. Badarla]
- CS 311 Data Communication (Aug-Nov'17)

Indian Institute of Technology Kharagpur, India

Teaching Assistant, School of Information Technology

- Wireless Ad-Hoc & Sensor Networks, Autumn Semester 2012.
- Information System Design Laboratory, Autumn Semester 2011.

Dr. B. C. Roy Engineering College, Durgapur, India

Sr. Lecturer, Department of Information Technology,
1st January, 2008 to 5th February, 2008.

Course Taught: Data Structure

Bankura Unnayani Institute of Engineering, Bankura, India

Lecturer, Dept. of Computer Science and Engineering,
22nd November, 2005 to 31st December, 2007.

Course Taught:

- C Programming Language
- Object Oriented Programming
- Data Structure
- Operating Systems
- System Software and Network Administration

RESEARCH
EXPERIENCE

Temasek Laboratories, SUTD, Singapore

Research Assistant (19th May, 2015 to 10th September, 2015)

Postdoctoral Research Fellow (11th September, 2015 to 27th December, 2016)

- Project: Cross-functional Information System for Decision Making (CISDeM)
- Sponsor: Ministry of Defence, Singapore.
- Type of Research: CISDeM is a cyber-information research program for decision making against network security threats. It adopts an inter-disciplinary research view spanning security, natural language processing, machine learning, signal processing, and networking to protect mission-critical network infrastructures.

Sponsored Research and Industrial Consultancy, IIT Kharagpur, India

Senior Research Fellow (26th May, 2010 to 31st March, 2013)

- Project: Towards Robust Efficient and Secure Data Acquisition in Underwater Sensor Networks.
- Sponsor: Department of Information Technology, Government of India.
- Type of Research: Protocol design in UWSNs for a) Delay Tolerant Routing, b) Fault Tolerant Routing, c) Jamming Detection, and d) Robust Architecture. UWSN simulator design using MATLAB and NS3.

PROFESSIONAL EXPERIENCE	<p>Tata Consultancy Services, India</p> <p><i>Assistant Systems Engineer, Banking & Financial Services</i> 6th February, 2008 to 25th June, 2010.</p> <ul style="list-style-type: none"> • Provided the core Insurance Solution using TCS BaNCS Insurance. <ul style="list-style-type: none"> • Client: DLF Pramerica Life Insurance Company Limited, India. Duration: April, 2009 to June, 2010. Role: System Designer, Developer, and Development Team Leader • Client: Skandia-BSAM Life Insurance Company Limited, China. Duration: June, 2008 to March, 2009. Role: System Developer.
PRESENTATION AND TALKS	<ul style="list-style-type: none"> • Delivered guest lecture on “Recent Research Trends in Wireless Sensor Networks” in “Seminar on Computing and Informatics”, organized by St. Thomas’ College of Engineering and Technology, Kolkata, June 2013. • Presented my paper in <i>the 14th International Conference on Distributed Computing and Networking</i>, TIFR, Mumbai, January 3-6, 2013,
AWARDS	<p>National Internet Exchange of India</p> <ul style="list-style-type: none"> • National Scholarship at Ph.D. level for one year, 2014-15.
PROFESSIONAL AFFILIATIONS	<ul style="list-style-type: none"> • IEEE Member since January 2013 (ID: 92558724) • Member of <i>Narayangarh Vivekananda Yuva Mahamandal</i>, an affiliated unit of Akhil Bharat Vivekananda Yuva Mahamandal, since 1989.
TPC MEMBER	<p>2017: ISDDC, NBiS, ICIIT</p> <p>2016: NCC</p>
REVIEW SERVICE	<p>IEEE Transactions on Cloud Computing IEEE Transactions on Vehicular Technology IEEE Transactions on Mobile Computing IEEE Transactions on Wireless Communications Ad Hoc Networks Journal of Network and Computer Applications EURASIP Journal on Wireless Communications and Networking Photonic Network Communications International Journal of Communication Networks and Distributed Systems IHCI 2012, TechSym 2014,2016, INDOCRYPT 2014, VTC 2016.</p>
JOURNAL PUBLICATIONS	<ol style="list-style-type: none"> 1. S. Misra and M. Khatua, “Packet-Centric Trade-off and Unfair Success Region in IEEE 802.11 WLANs,” <i>IEEE Transactions on Vehicular Technology</i>, Vol. 66, No. 5, pp. 4223-4230, May, 2017. 2. S. Das, M. Khatua, and S. Misra, “Cheating-Resilient Bandwidth Distribution in Mobile Cloud Computing,” <i>IEEE Transactions on Cloud Computing</i>, Vol. PP, No. 99, pp. 11, December, 2016. 3. M. Khatua and S. Misra, “Exploiting Anomalous Slots for Multiple Channel Access in IEEE 802.11 Networks,” <i>Journal of Network and Computer Applications</i>,

Vol. 74, pp. 56-65, August, 2016.

4. S. Misra, S. Singh and **M. Khatua**, "MIRACLE: Mobility Prediction Inside a Coverage Hole Using Stochastic Learning Weak Estimator," *IEEE Transactions on Cybernetics*, Vol. 46, No. 7, pp. 1486-1497, July, 2016.
5. **M. Khatua** and S. Misra, "D2D: Delay-aware Distributed Dynamic Adaptation of Contention Window in Wireless Networks," *IEEE Transactions on Mobile Computing*, Vol. 15, No. 2, pp. 322-335, February, 2016.
6. S. Das, **M. Khatua**, S. Misra and M. S. Obaidat, "Quality-assured Secured Load Sharing in Mobile Cloud Networking Environment," *IEEE Transactions on Cloud Computing*, Vol. PP, No. 99, pp. 11, July, 2015.
7. S. Misra and **M. Khatua**, "Semi-Distributed Backoff: Collision-Aware Migration from Random to Deterministic Backoff," *IEEE Transactions on Mobile Computing*, Vol. 14, No. 5, pp. 1071-1084, May, 2015.
8. S. Misra, S. Mishra and **M. Khatua**, "Social Sensing-based Duty Cycle Management for Monitoring Rare Events in Wireless Sensor Networks," *IET Wireless Sensor Systems*, Vol. 5, No. 2, pp. 68-75, April, 2015.
9. S. Misra, S. Singh, **M. Khatua** and M. S. Obaidat, "Extracting Mobility Pattern from Target Trajectory in Wireless Sensor Networks," *International Journal of Communication Systems*, Vol. 28, No. 2, pp. 213-230, January, 2015.
10. **M. Khatua** and S. Misra, "CURD: Controllable Reactive Jamming Detection in Underwater Sensor Networks," *Pervasive and Mobile Computing*, Vol. 13, pp. 203-220, August, 2014.
11. S. Misra, S. Das, **M. Khatua** and M. S. Obaidat, "QoS-Guaranteed Bandwidth Shifting and Redistribution in Mobile Cloud Environment," *IEEE Transactions on Cloud Computing*, Vol. 2, No. 2, pp. 181-193, April-June, 2014.
12. T. Ojha, **M. Khatua** and S. Misra, "Tic-Tac-Toe-Arch: A Self-organizing Virtual Architecture for Underwater Sensor Networks," *IET Wireless Sensor Systems*, Vol. 3, No. 4, pp. 307-316, December, 2013.
13. S. Misra, S. Dash, **M. Khatua**, A. V. Vasilakos and M. S. Obaidat, "Jamming in Underwater Sensor Networks: Detection and Mitigation," *IET Communications*, Vol 6, No. 14, pp. 2178-2188, September, 2012.

CONFERENCE
PUBLICATIONS

1. **M. Khatua**, S. H. Safavi and N.M. Cheung, "Detection of Internet Traffic Anomalies using Sparse Laplacian Component Analysis," *Proc. of the IEEE GLOBECOM*, Singapore, December 4-8, 2017, pp. .
2. **M. Khatua** and S. Misra, "Exploiting Partial-Packet Information for Reactive Jamming Detection: Studies in UWSN Environment," *Proc. of the ICDCN*, TIFR, Mumbai, January 3-6, 2013, pp. 118-132.
3. S. Das, S. Misra, **M. Khatua** and Joel J. P. C. Rodrigues, "Mapping of Sensor Nodes with Servers in a Mobile Health-Cloud Environment," *Proc. of the Healthcom*, Lisbon, October 9-12, 2013, pp. 481-485.
4. S. Misra, A. Mondal, S. Banik, **M. Khatua**, S. Bera and M. S. Obaidat, "Residential Energy Management in Smart Grid: A Markov Decision Process-Based Approach,"

OTHER
PUBLICATIONS

1. **M. Khatua** and S. Misra, "Realizing Virtual MIMO through Opportunistic Parallelism for Increasing Revenue in Enterprise Wireless Local Area Networks." In: *The Second IDRBT Doctoral Colloquium*, IDRBT, Hyderabad, December 20-21, 2012.

BOOK CHAPTERS

1. S. Misra and **M. Khatua**, "Cross-Layer Techniques and Applications in Wireless Sensor Networks," In: H. F. Rashvand and Y. S. Kaviani (Eds.), *Using Cross-Layer Techniques for Communication Systems*, USA, IGI Global, 2012, pp. 94-119.

REFERENCE

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