

Subarna Chatterjee *February 27, 1990*

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Post-Doctoral Researcher • Harvard University • USA

Research Interests

Internet of Things

NoSQL, big data, fog computing, data stream processing

Cloud computing

pricing, infrastructural development, virtualization, cloud networking, distributed clouds

Wireless Sensor Networks

routing, data aggregation, resource management

Education

Doctor of Philosophy (Ph.D)

2013-2017

Indian Institute of Technology

KHARAGPUR, INDIA

- *Department:* Department of Computer Science & Engineering
- *Broad areas of research:* Sensor-cloud Infrastructure, Traditional Cloud computing, Wireless Sensor Networks
- *CGPA:* 9.2

Graduate Aptitude Test in Engineering (GATE) Examination

2013

Computer Science & Information Technology

- *Percentile:* 99.68
- *All India Rank:* 725

Bachelor of Technology (B.Tech.)

2008 – 2012

West Bengal University of Technology

KOLKATA, INDIA

- *Institution:* Institute of Engineering & Management
- *Stream:* Computer Science & Engineering
- *GPA:* 8.67 (1st), 9.035 (2nd), 8.975 (3rd), 9.04 (4th)
- *DGPA:* 8.99

Higher Secondary Examination

2006 – 2008

West Bengal Council of Higher Secondary Education

KOLKATA, INDIA

- *Institution:* Patha Bhavan
- *Subjects:* Physics, Chemistry, Mathematics, Biology
- *Percentage:* 90% (Best of 4)

Secondary Examination

2006

West Bengal Board of Secondary Education

KOLKATA, INDIA

- *Institution:* Julien Day School, Elgin Road
 - *Subjects:* Science
 - *Percentage:* 91.5%
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Work Experience

Harvard University

MASSACHUSETTS, UNITED STATES

Post-Doctoral Fellow

January '19 onwards

Inria

RENNES, FRANCE

Post-Doctoral Researcher

February '17 – September '18

Indian Institute of Technology

KHARAGPUR, INDIA

Tata Consultancy Services (TCS) Research Scholar

December '14 – January '17

Indian Institute of Technology

KHARAGPUR, INDIA

Junior Research Fellow (JRF)

April '13 – December '14

Cognizant Technology Solutions

KOLKATA, INDIA

Programmer Analyst & Trainee

June '12 – April '13

Teaching Experience

Harvard University

KHARAGPUR, INDIA

- Teaching Fellow for CS265: Big Data Systems (*Spring 2019, 2020*)
- Teaching Fellow for CS165: Data Systems (*Fall 2019*)

Indian Institute of Technology

KHARAGPUR, INDIA

- Laboratory Assistantship for IT60119: Wireless Adhoc Sensor Networks (*Fall 2015*)
- Teaching Assistantship for IT60102: Internet and Web Technologies (*Spring 2015*)
- Laboratory Assistantship for IT60192: Internet and Web Technologies (*Spring 2015*)
- Teaching Assistantship for IT60119: Wireless Adhoc Sensor Networks (*Fall 2014*)

Research visits

- Boston University, 2020, Massachusetts Institute of Technology (MIT), 2020
- Berkeley National Laboratory, USA, 2017
- Polytechnic University of Catalonia, Catalonia, 2017

Publications

Books

1. S. Misra, S. Sarkar, and **S. Chatterjee**, "Sensors, Cloud, and Fog: The Enabling Technologies for the Internet of Things," *CRC Press, Taylor & Francis Group*, 2019.

Conferences

1. S. Luo, **S. Chatterjee**, R. Ketsetdis, N. Dayan, W. Qin, and S. Idreos, "Rosetta: A Robust Space-Time Optimized Range Filter for Key-Value Stores," *Proceedings of the ACM SIGMOD International Conference on Management of Data*, 2020.
2. **S. Chatterjee**, and C. Morin, "Experimental Study on the Performance and Resource Utilization of Data Streaming Frameworks," *IEEE/ACM Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, 2018.
3. **S. Chatterjee**, and S. Misra, "Adaptive Data Caching for Provisioning Sensors-As-A-Service," *IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom)*, 2016.
4. **S. Chatterjee**, and S. Misra, "QoS Estimation and Selection of CSP in Oligopoly Environment for Internet of Things," *IEEE Wireless Communications and Networking Conference (WCNC)*, 2016.
5. **S. Chatterjee**, and S. Misra, "Optimal Composition of a Virtual Sensor for Efficient Virtualization Within Sensor-cloud," *IEEE International Conference on Communications (ICC)*, 2015.
6. **S. Chatterjee**, S. Sarkar, and S. Misra, "Quantification of Node Misbehavior in Wireless Sensor Networks: A Social Choice-Based Approach," *IEEE International Conference on Communications (ICC) Workshop*, 2015.
7. **S. Chatterjee**, S. Sarkar, and S. Misra, "Energy-Efficient Data Transmission in Sensor-Cloud," *International Conference on Applications and Innovations in Mobile Computing (AIMoC)*, 2015.
8. P. V. S. R. Teja, **S. Chatterjee**, S. N. Das, and S. Misra, "Two-Level Mapping to Mitigate Congestion in Machine to Machine (M2M) Cloud," *International Conference on Applications and Innovations in Mobile Computing (AIMoC)*, 2015.
9. **S. Chatterjee**, and S. Misra, "Dynamic and Adaptive Data Caching Mechanism for Virtualization within Sensor-Cloud," *IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, 2014.

Journals

1. S. Idreos, K. Zoumpatianos, **S. Chatterjee**, W. Qin, A. Wasay, B. Hentschel, M. Kester, N. Dayan, D. Guo, M. Kang, and Y. Sun, "Learning Data Structure Alchemy," *Bulletin of the IEEE Computer Society Technical Committee on Data Engineering*, 2019.
2. **S. Chatterjee**, A. Roy, S. K. Roy, S. Misra, M. S. Bhogal, and R. Daga, "Big-Sensor-Cloud Infrastructure: A Holistic Prototype for Provisioning Sensors-as-a-Service," *IEEE Transactions on Cloud Computing*, 2019.
3. S. Sarkar, **S. Chatterjee**, and S. Misra, R. Kudupudi, "Privacy-Aware Blind Cloud Framework for Advanced Healthcare," *IEEE Communication Letters*, 2017.

4. P. Bhavathankar, **S. Chatterjee**, and S. Misra, "Link-Quality Aware Path Selection in the Presence of Proactive Jamming in Fallible Wireless Sensor Networks," *IEEE Transactions on Communications*, 2017.
5. S. Sarkar, **S. Chatterjee**, and S. Misra, "Assessment of the Suitability of Fog Computing in the Context of Internet of Things," *IEEE Transactions on Cloud Computing*, 2015.
6. **S. Chatterjee**, S. Misra, and S. U. Khan, "Optimal Data Center Scheduling for Quality of Service Management in Sensor-cloud," *IEEE Transactions on Cloud Computing*, 2015.
7. **S. Chatterjee**, R. Ladia, and S. Misra, "A Dynamic Optimal Pricing Scheme for Heterogeneous Service-Oriented Architecture for Sensor-cloud Infrastructure," *IEEE Transactions on Services Computing*, 2015.
8. S. Misra, A. Singh, **S. Chatterjee**, and A. K. Mandal, "QoS-Aware Sensor Allocation for Target Tracking in Sensor-Cloud," *Ad Hoc Networks*, Elsevier, 2015.
9. S. Sarkar, **S. Chatterjee**, and S. Misra, "Evacuation and Emergency Management Using a Federated Cloud," *IEEE Cloud Computing Magazine*, 2015.
10. S. Misra, and **S. Chatterjee**, "Social Choice Considerations in Cloud-Assisted WBAN Architecture for Post-Disaster Healthcare: Data Aggregation and Channelization," *Information Sciences*, Elsevier, 2014.
11. **S. Chatterjee**, and S. Misra, "Sensor-Target Mapping in Presence of Overlapping Coverage: Tracking Using Sensor-Cloud," *IEEE Communication Letters*, 2014.
12. S. Misra, A. Singh, **S. Chatterjee**, and M. S. Obaidat, "Mils-Cloud: A Sensor-Cloud Based Architecture for the Integration of Military Tri-Services Operations and Decision Making," *IEEE Systems Journal*, 2014.
13. S. Misra, **S. Chatterjee**, and M. S. Obaidat, "On Theoretical Modeling of Sensor-Cloud: A Paradigm Shift From Wireless Sensor Network," *IEEE Systems Journal*, 2014.

Patents

1. **S. Chatterjee**, A. Roy, S. K. Roy, S. Misra, M. S. Bhogal, and R. Daga, "Sensory network for persuasive and pervasive virtualization of physical sensors into renderable time service", Indian patent filed in November 2014 (Ref: 1145/KOL/2014).
2. S. Sarkar, **S. Chatterjee**, S. Misra, E. A. Ansari, D. Ghatak, and S. Sarkar, "A Privacy-Aware ambulatory healthcare system using wireless body area networks (WBANS).", Indian patent filed in January 2016 (Ref: 201631000214).

Theses

1. **S. Chatterjee**, "Sensors-As-A-Service: Towards the Conceptualization of Sensor-Cloud", *Ph.D. Thesis*, July, 2017.

Achievements

Fellowship/Scholarship

1. Awarded the **Facebook Grace Hopper Scholarship** (*one of the 50 recipients worldwide*), 2016
2. Awarded the **N2 Women Young Researcher Fellowship** through **ACM SIGMOBILE** program to attend IEEE WCNC, 2016
3. Awarded the **Student Scholarship** to attend the **Grace Hopper Celebration of Women in Computing India (GHCI)**, 2015 conference
4. Awarded **Google Anita Borg Fellowship, Asia Pacific**, (2015).
5. Awarded **Tata Consultancy Service (TCS) Research Fellowship** (2014-2017).
6. Awarded **Fellowship** from **ISIRD, IIT Kharagpur** (2013-2014).

Awards/Certifications

1. Awarded the **Marie-Sklodowska-Curie Actions Seal of Excellence** for submitting proposal for Marie-Sklodowska-Curie Individual Fellowship, 2018
2. Selected as the **Awards Co-Chair** of the **N2Women Board**, 2017
3. Selected as one of the **10 Women in Networking/Communications That You Should Watch** by **N2Women**, 2016.
4. Selected as one of the **Most Qualified Young Scientist** to attend the **Heidelberg Laureate Forum**, 2016.
5. Selected as the **Leader of the Google Anita Borg Scholarship Community** (*solitary from the country and one of the seven across the world*) and invited to attend **Google I/O 2016**.

6. Awarded as the **Winner in Hackathon in Robotics** at **Google Shanghai**, 2015.
 7. Awarded a **fully-sponsored Travel Grant** by **Ministry of Human Resource (MHRD)** for presenting in a **listed conference - IEEE ICC**, 2015.
 8. Awarded certificate of appreciation at **ComSoc Student Competition** “Communications Technology Changing the World”, 2014 for being ranked among the **top 9** projects.
 9. Awarded **Second Runners Up** in **Samsung Innovation Award**, 2014.
 10. Awarded **certificate of Merit** and **certificate of participation** from **West Bengal Renewable Energy Development Agency (WBREDA)** in association with **Vivekananda Institute of Environment and Management**, Kolkata for being **Second Runners Up** in a model making competition.
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Technical Skills

- **Programming**

- High Level Languages: C, C++, Java, Python, JSP, Servlets, Visual Basic
- Database coding: SQL, T-SQL
- Others: HTML, Shell script, MATLAB, Strawberry Prolog, GNU, USB Coding

- **Database Handling**

- RocksDB, ORACLE, SQL Server, MYSQL

- **Platforms**

- Apache Flink, Apache Storm, Twitter Heron, Apache Spark, Hadoop, Eucalyptus, MATLAB, Eclipse, Netbeans, Dev Cpp, VMWare, LaTeX

- **Operating Systems**

- Windows, Linux, Ubuntu, CentOS
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Services to Community

Core Member of Embedded EthiCS (2019-)

Awards Co-Chair of the N2Women Board (2016-2018)

Reviewer in International Journals

- IEEE Transactions on Vehicular Technology, IEEE Transactions on Cloud Computing, IEEE Transactions on Big Data, IEEE Transactions on Communications, IEEE Transactions on Parallel and Distributed Systems, Pervasive and Mobile Computing, Elsevier, IEEE Systems Journal, IEEE Internet of Things, International Journal of Communication Networks and Distributed Systems (IJCNDs)

Program Committee/Reviewer in International Conferences

- ACM SIGMOD International Conference on Management of Data, (2021), The WebConf (2020), ACM MobiCom Future Industrial Communication Networks (FICN) 2018, IEEE SmartData (2019), IEEE BigData (2018), IEEE ICFEC (2017), IEEE ICC (2015, 2016), IEEE TechSym (2014, 2016), IEEE ANTS (2015)

IEEE Member, Women in Engineering (WIE)
