

# Soumi Chattopadhyay

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<b>Contact Information</b>	Distributed and Service Computing Lab, R. A. Fisher Bhavan, Advanced Computing and Microelectronics Unit, Indian Statistical Institute, 203, B.T. Road, Kolkata-700108, India. <i>e-mail id</i> : soumi61@gmail.com, soumi_r@isical.ac.in. <i>Webpage</i> : <a href="http://www.isical.ac.in/~soumi_r/">http://www.isical.ac.in/~soumi_r/</a>
<b>Research Interests</b>	Services Computing, Automated Reasoning, Logic, Automata theory, Formal Methods, Algorithm, Artificial Intelligence.
<b>Academic Details</b>	<p><b>Junior Research Fellow in Computer Science</b> (July 2014 - Present) — ACM Unit, Indian Statistical Institute, Kolkata, India. <i>Thesis Title</i> : Scalable Algorithms for Service Design, Analysis and Verification. <i>Supervisor</i> : Dr. Ansuman Banerjee, Associate Professor, ACMU, Indian Statistical Institute, Kolkata. <i>Brief Description</i> : The objective of this thesis is to work on problems in the service computing paradigm. The main aim is to develop efficient and scalable algorithms for a classical service architecture paradigm that can be seamlessly adopted for practical use while providing provable guarantees.</p> <p><b>M.Tech. in Computer Science</b> (July 2012 - June 2014) — Indian Statistical Institute, Kolkata, India. Marks: 85.60% <i>Dissertation Title</i> : Design and Analysis of Context Aware Systems. <i>Supervisor</i> : Dr. Ansuman Banerjee, Assistant Professor, ACMU, Indian Statistical Institute, Kolkata. <i>Brief Description</i> : A model for middleware design for large-scale context aware systems that distributes only relevant data based on its effective utility.</p> <p><b>B.Tech. in Computer Science and Engineering</b> (July 2008 - June 2012) — West Bengal University of Technology, India. GPA: 9.02 out of 10 <i>Dissertation Title</i> : AIEM College Information System. <i>Supervisor</i> : Ms. Sritama Chakraborty, Assistant Professor, Dept. of CSE, Abacus Institute of Engineering &amp; Management, West Bengal-712148, India.</p> <p><b>Higher Secondary (10+2 level)</b> (March 2008) — West Bengal Council of Higher Secondary Education, India. Marks: 80.57%</p> <p><b>Secondary (10 level)</b> (March 2006) — West Bengal Board of Secondary Education, India. Marks: 91.625%</p>
<b>Research Projects</b>	<p><b>Summer Internship</b> (May 2015 - Sept. 2015) at Xerox Research Center, India. <i>Project Title</i> : Mechanism Design in Services Platform. <i>Mentors</i> : Dr. Rahul Ghosh and Dr. Tridib Mukherjee, Xerox Research Center, India.</p>

### Summer Internship

(May 2013 - July 2013)

at Infosys Research Lab, Bangalore, India.

*Project Title* : Identity Resolution of Entities.

*Mentor* : Mr. Swaminathan Natarajan, Infosys Research Lab, Bangalore.

*Co-Mentor* : Mr. Vidya Sagar Dahiya, Infosys Research Lab, Bangalore.

### Teaching Experience

- TA for Programming and Data Structure Lab, M.Tech (CS), Indian Statistical Institute, Kolkata, July-December 2015.
- TA for Programming and Data Structure Lab, M.Tech (CS), Indian Statistical Institute, Kolkata, July-December 2014.

### Awards & Achievements

- PhD dissertation proposal selected for presentation in the ACM / IEEE UCC PhD forum, 2015, Limassol, Cyprus.
- Tata Consultancy Services (TCS) Award for best application oriented work in M.Tech. Dissertation, 2014.
- Received prize money in M.Tech for being in Top 5.
- M.Tech dissertation proposal selected for presentation in the ACM DEBS Doctoral Symposium, 2014, in IIT-Bombay, India.
- M.Tech dissertation proposal selected for presentation in XRCI-Open, 2014, in Bangalore, India.
- All India Rank - 438 in *Graduate Aptitude Test in Engineering (GATE-2012 in CS)* with 99.72 percentile, 2012.
- Ranked 1<sup>st</sup> in B.Tech. (among all the dept.s) in Abacus Institute of Engineering and Management, WBUT in 2012.
- National Merit Scholarship from MHRD, India, on the basis of Secondary level exam., 2006-2008.

### Grant Received

- ACM-India/IARCS Travel Grant to attend DATE (Design, Automation and Test in Europe), Dresden, Germany, Mar., 2016.
- Student Travel Grant from VMCAI (Int. Conf. on Verification, Model Checking and Abstract Interpretation), Mumbai, India, Jan., 2015.
- ACM Sponsorship for registration of ICSOC (Int. Conf. on Service Oriented Computing), Goa, India, Nov., 2015.
- Travel Award to attend the I-CARE Big Data Analytics and Cognitive Computing Winter School, Bangalore, India, Oct. 2014.
- Student Scholarship to attend ACM-DEBS (Int. Conf. on Distributed Event-Based Systems), Mumbai, India, 2014.
- Travel Grant from Xerox Research Centre India, to attend XRCI-Open, Bangalore, India, 2014.

### Membership

- Association for Computing Machinery ( ACM )  
— Student Member (M. No.: 9386510)
- Institute of Electrical and Electronics Engineers ( IEEE )  
— Graduate Student Member (M. No.: 93362790)

## Patent Filed

- “System and Method for Quantitative Evaluation of an Organizational Incentive Scheme”, 2015 (US patent filed jointly with Xerox Research Centre, India).
- “A System and Method for Aggregate Quantification of Client Operations in Services”, 2015 (US patent filed jointly with Xerox Research Centre, India).
- “A System and Method for Incentive Design in Task Oriented Services Enterprise”, 2015 (US patent filed jointly with Xerox Research Centre, India).

## Publication

1. **Chattopadhyay, S.**, and Banerjee, A., “QSCAS: QoS aware web service Composition Algorithms with Stochastic parameters”, To appear in International Conference on Web Services (ICWS) 2016, San Francisco.
2. **Chattopadhyay, S.**, Banerjee, A., and Banerjee, N., “A Scalable Rule Engine Architecture for Service Execution Frameworks”, To appear in the International Conference on Services Computing (SCC) 2016, San Francisco.
3. **Chattopadhyay, S.**, Banerjee, A., and Mukherjee, T., “A Framework for Top Service Subscription Recommendations for Service Assemblers”, To appear in the International Conference on Services Computing (SCC) 2016, San Francisco.
4. Ghosh, R., Gupta, A., **Chattopadhyay, S.**, Banerjee, A., and Dasgupta, K., “CoCOA: A Framework for Comparing Aggregate Client Operations in BPO Services”, To appear in the International Conference on Services Computing (SCC) 2016, San Francisco.
5. Bhattacharjee, D., **Chattopadhyay, S.**, and Banerjee, A., “EAST: Efficient Assertion Simulation Techniques”, In Proc. of Design, Automation and Test in Europe (DATE) 2016, Germany.
6. **Chattopadhyay, S.**, Banerjee, A., “Algorithmic Strategies for Sensing-as-a-Service in the Internet-of-Things Era”. In Proc. of Utility and Cloud Computing (UCC) 2015, Limassol, Cyprus, pp. 387-390.
7. **Chattopadhyay, S.**, Paul, H. S. and Banerjee A., “On Composition of Checkpoint and Recovery Protocols for Distributed Systems”, In Proc. of DISCO @ ICSOC (Int. Conf. on Service Oriented Computing), India, 2015.
8. Dutta, S., **Chattopadhyay, S.**, Banerjee, A. and Dasgupta, P., “A new approach for minimal environment construction for modular property verification”, In Proc. of Asian Test Symposium (ATS), India, pp. 205-210, 2015.
9. **Chattopadhyay, S.**, Dutta, S., and Banerjee, A., “A framework for fast service verification and query execution using Boolean service rules”, In Proc. of Asia Pacific Service Computing Conference (APSCC), Thailand, pp. 17-32, 2015.
10. **Chattopadhyay, S.**, Banerjee, A., and Banerjee, N., “A Scalable and Approximate Mechanism for Web Service Composition”, In Proc. of International Conference on Web Services (ICWS), New York, pp. 9-16, 2015.
11. **Chattopadhyay, S.**, Banerjee, A., and Banerjee, N., “A Scalable Rule Engine Architecture for Rule Engine based Decision Support Systems”, In Proc. of Medinfo, Brazil, pp. 947, 2015.
12. **Chattopadhyay, S.**, Banerjee, A., and Banerjee, N., “A Data Distribution Model for Large-scale Context Aware Systems”, In Proc. of Mobiquitous, Japan, pp. 615-627, 2013.

**Participation  
&  
Presentation\***

- Design, Automation and Test in Europe (DATE), Dresden, Germany, 2016\*.
- 8<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing (UCC), Doctoral Symposium\*, Limassol, Cyprus, 2015.
- International Workshop on Dependability Issues in Services Computing (DISCO @ ICSOC), Goa, India, 2015.\*
- ACM International Conference on Distributed Event Based System (DEBS), Doctoral Symposium, 2014, in IIT-Bombay, India.\*
- XRCI-OPEN, India, 2014.\*
- International Conference on Service Oriented Computing (ICSOC), Goa, India, 2015.
- International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), Mumbai, India, 2015.
- 42<sup>nd</sup> ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL), Mumbai, India, 2015.
- I-CARE Big Data Analytics and Cognitive Computing Winter School, Bangalore, India, 2014.

**Hobby**

Painting, Reading story books.

**References**

- Dr. Ansuman Banerjee  
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Advanced Computing and Microelectronics Unit,  
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- Prof. Bhargab B Bhattacharya  
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