

ABHIRUP GHOSH

24/2 Guthrie Street
Edinburgh – EH1 1JG, UK

Email: abhirup.ghosh@ed.ac.uk
Contact no: +44 7818300690

Relevant Experience

- PhD student at School of Informatics, University of Edinburgh, under Dr. Rik Sarkar
- Research experience in both academia (5 research papers) and industry (2 patents, 1 standardization)

Career Summary

Career	Domain/Designation	Institute	Year	CPI
PhD	Efficient sensor data analysis	University of Edinburgh	2015 –	–
Industry	Senior Software Developer	Intel Corporation	2011–15	–
M. Tech	Computer Science and Engineering	IIT Bombay, India	2009–11	9.49/10
B. Tech	Information Technology	Jadavpur University, India	2005–09	9.40/10

Research Papers

- Abhirup Ghosh, Benedek Rozemberczki, Subramanian Ramamoorthy, Rik Sarkar, **Topological Signatures for Fast Mobility Analysis**, International Conference on Advances in Geographic Information Systems (SIGSPATIAL), 2018
- Abhirup Ghosh, Christopher Lucas, Rik Sarkar, **Finding Periodic Discrete Events in Noisy Streams**, Conference on Information and Knowledge Management (CIKM), 2017
- Jiaxin Ding*, Abhirup Ghosh*, Rik Sarkar, Jie Gao, **Differentially Private Sensing for Distributed Asynchronous Spatiotemporal Data**, Under review at Mobihoc 2019. [* equal contribution]
- Panagiota Katsikouli, Abhirup Ghosh, Rik Sarkar, **Density and Privacy Preserving Publication of Location Datasets**, preparing for submission.
- S. Chakraborty, D. K. Sanyal, A. Ghosh, A. Chakraborty, S. Chattopadhyay, M. Chattopadhyay, **Tuning Holdoff Exponents for Performance Optimization in IEEE 802.16 Mesh Distributed Coordinated Scheduler**, International Conference on Computer and Automation Engineering (ICCAE), 2010

Patent Applications

- A. Ghosh, P. P. Joshi, S. Shivarudrappa, **Automatic Seamless Context Share in Multi-comm Scenario**, US Patent Number: 8,880,051, Patent issued in November 2014
- A. Ghosh, K. D. Biswas, P. P. Joshi, **Seamless Connectivity Across Devices with Heterogeneous Transports**, US patent Application, PCT Number: PCT/US2013/048715, Filed in November 2013, Patent grant pending

Technology Standardization

- Contributed in Sports and Fitness Working Group (SF-WG), Bluetooth SIG in 2014 to standardize Bluetooth Low Energy Object Transfer Service Specification (*OTS*) and its Test Specification (*OTS-TS*)

Scholarships and Grants

- Received student travel grants from SIGIR (\$700) for CIKM'17 and ACM (\$500) for SIGSPATIAL'18
- Received both Principal's Career Development Scholarship and The Global Research Scholarship (£31.5k/year for three years), *Sep '15* (Only student to receive both in that year from School of Informatics)

Research Talks

- **Topological Signatures for Fast Mobility Analysis**
 - SIGSPATIAL conference in Seattle, USA, *Nov 2018* and Scottish Networking Event (SCONE), *Sep 2018*
- **Large Scale Data Mining** at Flipkart Pvt. Ltd., India, *Jan 2018*
- **Finding periodic discrete events in noisy streams** at
 - CIKM conference in Singapore, *Nov 2017* and Scottish Networking Event (SCONE), *Jan 2017*
 - Poster event, University of Edinburgh, *Dec 2016*

Academic achievement highlights

- Scored 10/10 in the M.Tech. final year research thesis (1 yr.), 2011
- Awarded Best Student Project of the institute by TCS Ltd. for B.Tech. final year research thesis (1 yr.), 2009
- Ranked 9th out of four hundred thousand students in the state in Higher Secondary (10+2) examination, 2005

Professional achievement highlights

- Received Intel India divisional recognition award (awarded quarterly across Intel India) for conceptualizing Intel's first smart watch, 2014
- First to demonstrate Object Transfer Service (OTS) in Android platform across all industries, 2014
- Represented Intel Corp. in Bluetooth SIG Interoperability test event as a technology expert, 2015
- Demonstrated feasibility of seamless context transfer in Intel India Innovation Summit, 2013

Major Research Projects

- **Distributed Differentially Private Sensing of Spatiotemporal Data Streams** (Dr. R. Sarkar, Prof. J. Gao)
 - Publish spatiotemporal events and answer range queries with differential privacy.
- **Topological Signatures for Fast Mobility Analysis** (Dr. S. Ramamoorthy, Dr. R. Sarkar)
 - Compact representation of mobility traces using topology to enable standard learning and mining.
- **Density and Privacy Preserving Publication of Location Datasets** (Dr. R. Sarkar, Dr. P. Katsikouli)
 - Publish location snapshots preserving privacy with guaranteed utility
- **Finding periodic discrete events in noisy streams** (Dr. C. Lucas, Dr. R. Sarkar)
 - Detect and track periodicity in noisy discrete event streams
- **A System for Searching Domain Experts** (Dr. R. Sarkar)
 - Complex network-based search system to find researchers who published in the given field
- **Determination of Safe region in Dynamically updatable programs** (Prof. D. M. Dhamdhere)
 - Determine when to pause a system to patch considering compiler optimizations
- **Improving Distributed Scheduling in WiMAX (IEEE 802.16) Mesh** (Dr. S. Chattopadhyay)
 - Tuning inter-packet waiting delay to achieve better throughput in distributed scenario

Major Development Projects at Intel Corp.

- **Intel Bluetooth Low Energy (BLE) solution**
 - Design and develop BLE software stack as a part of Intel's first BLE chip
- **Bluetooth Software Development in Android for Intel mobiles**
 - Develop Bluetooth stack and hardware specific drivers for Android phones with Intel Bluetooth chip
- **Contribution to open source software**
 - Intel Bluetooth drivers in Linux kernel, advanced BLE data link layer in Android open source (available in all Android devices since Android 7)
- **Generic Hardware Test Framework for Bluetooth Hardware**
 - Develop automation framework to test Intel communication hardware

Technical Expertise

- Data Mining , Machine Learning, Distributed Algorithms and Data structures, Complex networks
- Computational Geometry, Differential Geometry, Algebraic Topology, Probability and Statistics
- Wired and Wireless Networks, Operating systems, Compiler Optimization

Academic Services

- Part of organizers for Edinburgh Network Research Group seminars and maintainer of its website, since '17
- Organized Laboratory of Foundations of Computer Science (LFCS), UoE, lab lunch talks, Oct '16–Jan '17
- T.A. in Algorithmic Foundations of Data Science, UoE (Under Dr. Sun, Fall '18)
- T.A. in Social and Technological Network, UoE (Under Dr. Sarkar, Fall '16, '17, '18)
- T.A. in Distributed Systems, UoE (Under Dr. Sarkar, Dr. Franke, Dr. He, Fall '16, '17)
- T.A. in Advanced compilers, IIT Bombay (Under Prof. D. M. Dhamdhere, Spring '11)
- T.A. in Computer Architecture Laboratory, IIT Bombay (Under Prof. Bhaskar Raman, Fall '10)