Rahul Majethia

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Education

2014 – Present **Ph.D. Mathematics (Systems Research), Shiv Nadar University, India**
Tentative Thesis title: *Deep Context Sensing Systems for Social Interactions and Group Behavior*.
Advisors: Dr. Krishnan Rajkumar (JNU) and Dr. Santosh Singh.

2009 – 2013 **B.Tech (Computer Science), NIIT University, India (GPA 9.49/10.00)**
Bachelor Thesis: *Inertial Sensor based Queue Detection using Smartphones*

Research Experience

2015 – present **Research Scholar.** Mobile and Ubiquitous Computing, Department of Mathematics, Shiv Nadar University, India.

Responsible for (a) Leveraging micro-events for activity and deep context mining, particularly for human-human interactions and behavior, and (b) Developing models for robust Bluetooth Low Energy based ranging for indoor environments.

2016 – 2017 **Research Assistant.** Nokia Bell Labs, Cambridge, UK.
Supervisors: Akhil Mathur and Dr. Fahim Kawsar, Nokia Bell Labs

Worked on (a) Exploring application usage, notification interaction behavior, battery charging patterns and the impact of context on usage patterns of Indian users, and (b) Understanding how users interact with and choose between competing apps.

2013 – 2015 **Research Associate.** The HumanSense Project, ITRA Mobile - Govt. of India (part-time position Sep ’13 - Oct ’15)
Mentors: Dr. Debopam Acharya

Designed system architecture to crowdsource sensor-data from smartphones and interfaced Bluetooth devices, e.g. Sensorcon’s Sensordrone - with focus on data-sampling efficiency and mining ambient environment data.

Jan–July 2013 **Research Assistant.** LiveLabs, School of Information Systems, Singapore Management University, Singapore.
Mentors: Dr. Archan Misra and Dr. Rajesh Balan.

Responsibilities: (a) assisted in designing a smartphone-based system for real-time Queue detection in public venues (e.g. food courts, airport check-in) using inertial sensor (e.g. accelerometer, gyroscope) data. [Acknowledged Here], and (b) Developed a back-end system to compute individual and aggregate queue parameters [e.g. service time, waiting time in queues, etc.], addressing energy-efficiency and concurrent queue detection.

Teaching Experience

Fall '16,'17	**Graduate Teaching Assistant, MAT205 Probability and Statistics.** Shiv Nadar University, India. Responsible for conducting tutorials and assignment evaluation.
Fall 2016	**Course Instructor, CSD101 Introduction to Programming.** Department of CShiv Nadar University, India. Conducted lectures, designed assignments and midterm examinations.
Spring'14,'15	**Graduate Teaching Assistant, CSD335 Design and Analysis of Algorithms.** Shiv Nadar University, India. Responsible for conducting lab sessions and assignment evaluation.

Coursework and Skills

Courses	Mining of Massive Datasets, Computational Statistics, Advanced Algorithms, Performance Modeling, Wireless Sensor Networks
Languages	Java,Python, R, LaTeX, Julia.
Frameworks	Android, WEKA, TensorFlow, Pandas, Spark
Databases	MySQL,NOSQL, MongoDB.
Web Dev	HTML5, JavaScript, React

Awards and Achievements

2018	**Student Volunteer.** Session(s) Co-ordinator at ACM UbiComp/ISWC 2018
2015–2018	**Student Grants.** Travel grants for presenting work at ACM UbiComp/ISWC (2018), IEEE COMSNETS (2015,2016)
2015	**ITRA Ph.D. Research Award, DEITy.** Awarded by the Govt. of India, for significant contribution to ITRA Mobile project tasks (2014-15)
2014	**Shiv Nadar Fellowship** Ph.D. Fellowship for 4 years (2014-2018) in lieu of RA and TA duties for Algorithms, Probability and Statistics, Introduction to Computing

Scholarly Services

Reviewer

2018-2019	**Reviewer**, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)
2017-2019	**Reviewer**, Proceedings of the ACM CHI Conference on Human Factors in Computing Systems
2019	**Sub-Reviewer**, Proceedings of the ACM International Conference on Pervasive Computing and Communications (PerCom)

Scholarly Services (continued)

Undergraduate Mentorship

2017-2018 **Assitive HCI.** Mentoring Ms. Rithika Lakshminarayanan and Ms. Sanjana Gautam (Undergraduate Senior Year, Shiv Nadar University) in designing systems for assistive living, with focus on education and pervasive health.

2016-2017 **Behavorial Health Systems.** Mentored Ms. Sahiti Kunchay (currently Ph.D. 1st Year at PennState IST) and Ms. Lakshmi Manasa Kalanadhabhatta (currently M.S. Ph.D. 1st Year at UMass Amherst) in Ubiquitous Computing for monitoring social activities and mental health.

Research Publications

In Progress

Majethia, **R.**, Pushp, S., Rajkumar, K., & Sen, R. (n.d.). *Fine-grained Interaction Analysis of Relatively Stagnant Social Groups Using Smartphones and Wearables*. New York, NY, USA: ACM.

Majethia, **R.**, Sharma, P., & Kaur, G. (n.d.). *An Adaptive and Emotive Personalized Conversational Agent For Cognitive Behavioral Therapy*. Proc. ACM Interact. Mob. Wearable Ubiquitous Technol., New York, NY, USA: ACM.

Journal Articles

Mathur, A., Kalanadhabhatta, L. M., **Majethia**, **R.**, & Kawsar, F. (2017, September). Moving Beyond Market Research: Demystifying Smartphone User Behavior in India. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* IMWUT, *1*(3).

Conference Proceedings

Majethia, **R.** (2018). Deep Context Mining of Individuals and Groups Using Smartphone Sensor and Usage Data. In *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers* (pp. 1750–1753). UbiComp '18. Singapore, Singapore: ACM.

Majethia, **R.** & Rajkumar, K. (2018). Mining Channel State Information from Bluetooth Low Energy RSSI for Robust Object-to-object Ranging. In *Proceedings of the 8th International Conference on the Internet of Things, series = IOT '18* (23:1–23:4). Santa Barbara, California: ACM.

Kalanadhabhatta, L. M., Mathur, A., **Majethia**, **R.**, & Kawsar, F. (2017). Application Overchoice: Preliminary Lessons from a Longitudinal Study. In *Proceedings of the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. UbiComp '17. Maui, USA: ACM.

Majethia, **R.**, Singhal, A., Manasa K, L., Sahiti, K., Kishore, S., & Nandwani, V. (2016). AnnoTainted: Automating Physical Activity Ground Truth Collection Using Smartphones. In *Proceedings of the 3rd International on Workshop on Physical Analytics* (pp. 13–18). MobiSys '16. ACM. Singapore.

Majethia, **R.**, Joshi, A., Dasgupta, I., & Joshi, M. (2015). TicTorque: Diagnosing Effects of Blink Tics Through Mobile EEG Headsets. In *Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers* (pp. 25–28). UbiComp '15. ACM. Osaka, Japan.

Majethia, **R.**, Mishra, V., Pathak, P., Lohani, D., Acharya, D., & Sehrawat, S. (2015). Contextual Sensitivity of The Ambient Temperature Sensor in Smartphones. In *Communication Systems and Networks (COMSNETS), 2015 7th International Conference on* (pp. 1–8). IEEE.

References

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