

# Rajkumar Darbar

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## Education

- 2013–2016 **Master of Science by Research**, *Department of Computer Science and Engineering, Indian Institute of Technology Kharagpur, India*, CGPA-9.03.  
Thesis Title: Interactions with Smartphones and Smartwatches: Context-Awareness, Text Entry Interfaces, and Input Beyond Touch.
- 2008–2012 **B.Tech**, *West Bengal University of Technology*, CGPA-8.44.  
Specialization: Information Technology
- 2006–2008 **XII**, *West Bengal Council of Higher Secondary Education*, 85.42% .
- 2004–2006 **X**, *West Bengal Board of Secondary Education*, 87.75%.

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## Experience

- June, **Summer Intern**, *Samsung Research Institute, Bangalore*.  
2016–Nov, Developing seamless interaction technique to control physical appliances in IoT environment  
2016 using smart-ring.
- May, **Summer Intern**, *Xerox Research Center India, Bangalore*.  
2015–July, Project Mentor: **Dr. Kuldeep Yadav**  
2015 Designed a framework using smartwatch's accelerometer and gyroscope sensors to recognize a set of arm actions (e.g. drinking water/coffee, smoking, typing on a laptop, washing hands, brushing etc.) on a fine-grained level.
- July, **Project Trainee**, *CVPR Unit, Indian Statistical Institute, Kolkata*.  
2012–Dec, Faculty Contact: **Dr. Utpal Garain**  
2012 Conducted research on authentication of Indian bank-note using image processing and pattern recognition techniques.
- Feb, **Visiting Student Researcher**, *Information Technology Department, NIT Durgapur*.  
2012–May, Faculty Contact: **Dr. Nanda Dulal Jana**  
2012 Conducted research to improve the optimization performance of Differential Evolution and Artificial Bee Colony algorithms.
- June, **Summer Intern**, *Centre for Development of Advanced Computing (C-DAC), Kolkata*.  
2011–July, Developed an advanced personal information manager for J2ME based mobile phones. It al-  
2011 lows user to send a copy of his personal information (i.e. contacts, messages, images etc.) to a remote server in a timely basis so that an updated copy of personal data can always be main-  
tained at the remote site. Therefore, it provides safety and security of the personal data against the accidental loss of mobile phones.

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## Research Interests

Mobile Interaction, Wearable Computing, Context-Aware Computing, Machine Learning.

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## Publications

- [1] **Rajkumar Darbar**, Prasanta Kr. Sen, Debasis Samanta, "PressTact: Side Pressure-Based Input for Smartwatch Interaction", In 34<sup>th</sup> ACM Conference on Human Factors in Computing Systems (CHI 2016), 7 - 12 May, 2016, San Jose, CA, USA.
- [2] **Rajkumar Darbar**, Debasis Samanta, "SurfaceSense: Smartphone Can Recognize Where It Is Kept", In 7<sup>th</sup> ACM International conference on Human Computer Interaction (IndiaHCI 2015), 17 - 19 Dec, 2015, IIT Guwahati, India.
- [3] **Rajkumar Darbar**, Punyashlok Dash, Debasis Samanta, "ETAO Keyboard: Text Input Technique on Smartwatches", In 7<sup>th</sup> IEEE International conference on Intelligent Human Computer Interaction (IHCI 2015), 14 - 16 Dec, 2015, IIIT Allahabad, India.
- [4] **Rajkumar Darbar**, Prasanta Kr. Sen, Punyashlok Dash, Debasis Samanta, "Using Hall Effect Sensors for 3D space Text Entry on Smartwatches", In 7<sup>th</sup> IEEE International conference on Intelligent Human Computer Interaction (IHCI 2015), 14 - 16 Dec, 2015, IIIT Allahabad, India.
- [5] **Rajkumar Darbar**, Debasis Samanta, "MagiText : Around Device Magnetic Interaction for 3D Space Text Entry in Smartphone", In 3<sup>rd</sup> IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT 2015), 10 - 11 July 2015, IIIT-Bangalore, India.
- [6] Biswajit Halder, **Rajkumar Darbar**, Utpal Garain, Abhoy Ch. Mondal, "Analysis of Fluorescent Paper Pulps for Detecting Counterfeit Indian Paper Money", In 10<sup>th</sup> International Conference on Information Systems Security (ICISS 2014), 16 - 20 Dec, 2014, IDRBT Hyderabad, India.
- [7] Biswajit Halder, Utpal Garain, **Rajkumar Darbar**, Abhoy Ch. Mondal, "Inverse of Low Resolution Line Halftone Images for Document Inspection", In 6<sup>th</sup> IAPR International Workshop on Computational Forensics (IWCF 2014), 14 Aug, 2014, Sweden.
- [8] Nanda Dulal Jana, Adiya N. Hati, **Rajkumar Darbar**, Jaya Sil, "Real Parameter Optimization using Levy Distributed Differential Evolution", In 5<sup>th</sup> International Conference on Pattern Recognition and Machine Intelligence (PReMI 2013), 10 - 14 Dec, 2013, Indian Statistical Institute Kolkata, India.

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## Technical Skills

C, C++, Java, Python, Android, Weka, Matlab, Arduino, Tizen.

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## Extra Curricular

- Received travel grant from Microsoft Research India to attend CHI 2016 conference.
- Student volunteer at IEEE TechSym'14, IEEE IHCI'12 and IndiaHCI'15.
- ACM Student Member since September 2015. Membership Number is 1649658.
- Participated in Tizen Developer Summit, 30 - 31 July, 2015, Bangalore.
- Former Secretary of Information Technology Departmental Society (ITDS) Club, School of Information Technology, IIT Kharagpur.
- Research talk on "Recent Advances in Text Entry Mechanisms: From Mobile Device to Wearable Device" at 6<sup>th</sup> Research Scholars' Day, 2015, SIT, IIT Kharagpur.