

Curriculum Vitae

Partha Pratim Ray

Assistant Professor, Dept. of Computer Applications, Sikkim University, PO-Tadong, Gangtok-737102, Sikkim, India

DoB: 09 February, 1986, Nationality: Indian

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<http://scholar.google.com/citations?hl=en&user=-Vn4QBYAAAAJ>

Academic Qualification

Master of Technology in Electronics and Communication Engineering with specialization in Embedded Systems from Maulana Abul Kalam Azad University of Technology (formerly known as West Bengal University of Technology), Kolkata, India in 2011 having 88.60 percent (DGPA 9.60/10).

M.Tech Thesis Title: “**Automated Bug Localization in Embedded Softwares**”.

Bachelor of Technology in Computer Science and Engineering from Maulana Abul Kalam Azad University of Technology (formerly known as West Bengal University of Technology), Kolkata, India in 2008 having 74.09 percent (DGPA 8.15/10).

Higher Secondary and Secondary Examination from West Bengal Council of Higher Secondary Education and West Bengal Board of Secondary Education in 2004 and 2002 having 85.80 and 90.25 percent, respectively.

Work Experience

July, 2012 – Present: **Assistant Professor**

Dept. of Computer Applications, Sikkim University (A Central University under Govt. of India)

Gangtok, Sikkim, India

January, 2012 – June, 2012: Assistant Professor

Surendra Institute of Engineering and Management

Siliguri, West Bengal, India

Teaching Activities

Full Semester Courses taught at the Sikkim University from July, 2012 onwards in the BCA/MCA course

- Microprocessors (2015 Spring semester)
- Research Methodology (Statistics) (2014 Monsoon semester)
- Basic Electronics (2012, 2013, 2014 Monsoon semester)
- Computer Organization and Architecture (2014 Spring semester)
- Mathematical Foundation-I(Discrete Structure) (2013 Monsoon semester)

- Computer Application in Management (2013 Monsoon semester)
- Computer System Architecture (2013 Monsoon semester)
- Data Structure (2013 Monsoon semester)
- Computer Organization (2012 Spring semester)

Full Semester Courses taught at Surendra Institute of Engineering and Management, Siliguri from January, 2012 to June, 2012

- C Programming and Laboratory (at B. Tech. level)

Conference Committee Member

- Programme Committee Member in *International Conference on Computing and Communication Systems (I3CS)* held in NEHU, Shillong, India during 9th-10th April, 2015.

Training Programmes and Workshops Organized

- Coordinated 2 days *Hands-on Workshop using LaTeX (TeX-2014)* on 15th-16th November, 2014 at Sikkim University.
- Organized 5 days workshop on *ISI-SU Autumn School on Machine Intelligence and Applications (ASMIA)* jointly with Indian Statistical Institute (ISI), Kolkata on 22th-26th September, 2014 at Sikkim University.
- Organized 5 days workshop on *Theory and Tools for Language and Document Analysis and Research (TTL DAR)* jointly with Indian Statistical Institute (ISI), Kolkata on 24th-28th March, 2014 at Sikkim University.

Training Programmes and Workshops Attended

- Attended workshop on *Xilinx FPGA Architecture and Design flow* organized by Indian Institute of Technology-Guwahati, Guwahati on 22nd – 23rd November, 2013.
- Attended workshop on *Advances in Document Analysis and Retrieval* jointly organized by Indian Statistical Institute, Kolkata at Gauhati University, Gauhati on 7th - 11th March, 2013.
- Attended workshop on *i-Robotics* at Haldia Institute of Technology, Haldia, on 15th - 16th February, 2011.
- Attended workshop on *Hawk-Board* at Indian Institute of Technology Kharagpur, Kharagpur on 16th January, 2011.
- Attended short term course on *Advance DSP design techniques* at Indian Institute of Technology Kharagpur, Kharagpur on 28th Jun - 2nd July, 2010.
- Attended training programming on *Infosys campus connect* jointly organized by Infosys Inc. at B. P. Poddar Institute of Management and Technology in the year 2008-2009.
- Attended industrial training programming on *Switching, GSM mobile and OFC* at BSNL, Cooch Behar on 2nd - 24th July, 2007.

Research Interests

- Internet of Things
- Embedded Systems Design

- Distributed Computing
- Big Data Analytics

Professional Activities

Administration

- **Member of Technical Sub-Committee for Center of Endangered Languages (CEL) Committee:** Nominated by the Vice Chancellor of Sikkim University as the member of Technical Sub-Committee for Center of Endangered Languages (CEL) Committee to seek for infrastructure needed for smooth running of the center in Sikkim University, 2014-2015.
- **Member of Training and Placement Committee:** Nominated by the Vice Chancellor of Sikkim University as the member of Training and Placement Committee to provide job and training opportunities of students in Sikkim University, 2014-2015.
- **Member of NAAC Criterion Search Committee:** Nominated by the Vice Chancellor of Sikkim University as the member of NAAC Criteria Search Committee to search the Infrastructure and Learning Resources in Sikkim University, 2014-2015.
- **Member of IEEE CSI (Chapter Council) Executive Body:** Selected as member for executive body of the IEEE CSI as the member 2014-15.
- **Member of Board of Studies (BOS):** Nominated by the Vice Chancellor of Sikkim University as the member of BOS of the Department of Computer Sciences and Applications, Sikkim University, 2013-2016.
- **Admission Committee:** Served admission committee for the Integrated BCA-MCA 5 years course admission for the year 2013-14.
- **Syllabus Drafting Committee:** Served as syllabus drafting committee member for BCA-MCA 2013-14.
- **Department Library Committee:** Served as library committee member for BCA-MCA 2013-14.
- **Question Moderation Committee:** Served as library committee member for BCA-MCA 2013-14.
- **Departmental Purchase Committee:** Serves as purchase committee member for BCA-MCA 2013-15.

Academic

- **Adjunct Faculty:** Served as Adjunct Faculty at the Department of Management, Sikkim University during August-December 2013, taught Computer Applications in Management.
- **Adjunct Faculty:** Served as Adjunct Faculty at the Department of Management, Sikkim University during February-June 2014, taught Operation Research.

Full List of Patents

Domestic/National Patents Filled

- (P1) API-CRIEM : An API based Cloud Platform Supported Real Time Smart Device for Indoor Environment Monitoring with Triggering Mechanism. (Application Number: 531/KOL/2015) Inventors: **Ray. P. P.**, Bishunkey. K., Rai. R., Chettri, L., Khawas, C.
- (P2) Internet of Things based Environment Heat Index Measurement. (Application Number: 549/KOL/2015), Inventor: **Ray. P. P.**
- (P3) An Automated Missenard Index Measurement System. (Application Number: 566/KOL/2015), Inventor: **Ray. P. P.**
- (P4) IoT Physical Activity Monitoring. (Application Number: 599/KOL/2015), Inventor: **Ray. P. P.**, Chettri. L., Rai. R., Bishunkey. K.
- (P5) IoT based smart system for dust monitoring. (Application Number: /KOL/2015), Inventor: **Ray. P. P.**, Majumder. P.

Full List of Publications

Monograph

- (M1) **Ray, P. P.**, “Automated Bug Localization in Embedded Softwares: A New Paradigm Through Holistic Approaches”, Lap Lambert Publishing House, Germany, pages 80, ISBN: 978-3-8484-4439-7, March 2012.

Book

- (B1) **Ray. P. P.**, Rai. R., “Open Source Hardware: An Introductory Approach”, Lap Lambert Publishing House, Germany, pages 187, ISBN: 978-3-659-46591-8, July 2013.

Journal

- (J15) **Ray, P. P.**, “An Internet of Things based Approach to MISSENARD Index Measurement and Monitoring”, 2015. (Submitted)
- (J14) **Ray, P. P.**, “I2EMC: A Design and Implementation of Internet of Things Based Indoor Wood Equilibrium Moisture Content Monitoring System”, 2015. (Submitted)
- (J13) **Ray, P. P.**, “A Computational Study of Design and implementation of cloud Based Automated System to Measure and Monitor the Environmental Heat Index”, 2015. (Submitted)
- (J12) **Ray, P. P.**, Rai., R., “Validation of Range of Resistance of Sensor through Sensor Data Acquisition using SimPlot: A Case Study”, *International Journal of Advanced Research in Computer Science and Software Engineering*, ISSN: 2277-128X, Vol. 4(3), pp.1251-1255, 2014.

- (J11) **Ray, P. P.**, “Channel Modeling of Human Somatosensory Nanonetwork: Body Discriminative Touch and Proprioception Perspective”, *International Journal on Computer Science and Engineering (IJCSSE)*, ISSN: 0975-3397, Vol. 5(10), pp.874-884, 2013.
- (J10) **Ray, P. P.**, “Automata Modeling Of Hormonal Molecular Communication Channel In Human Body”, *International Journal on Recent Trends in Engineering and Technology (IJRTET)*, Vol. 8(1), ISSN: 2158-5563, pp.8-12, DOI: 01.IJRTET.8.1.35, 2013.
- (J9) **Ray, P. P.**, “Communication Channel Modeling and Automata Designing of Human Auditory System”, *International Journal on Recent Trends in Engineering and Technology (IJRTET)*, Vol. 8(1), ISSN: 2158-5563, pp.13-17, DOI: 01.IJRTET.8.1.49, 2013.
- (J8) Majumder, P., **Ray, P. P.**, “Hatch-Sens: a Theoretical Bio-Inspired Model to Monitor the Hatching of Plankton Culture in the Vicinity of Wireless Sensor Network”, *International Journal of Computer Science and Information Technologies (IJCSIT)*, ISSN: 0975-9646, Vol. 3(4), pp. 4764 - 4769, 2012.
- (J7) **Ray, P. P.**, “Ray’s Scheme: Graphical Password Based Hybrid Authentication System for Smart Hand Held Devices”, *Journal of Information Engineering and Applications (JIEA)*, Vol. 2(2), ISSN: 2225-0506, pp.1-11, 2012.
- (J6) **Ray, P. P.**, “Translation of Bengali Terms in Mobile Phones: a Simplified Approach Based on the Prescriptions of Conventional Accent Understand Ability”, *International Journal of Computer and Organization Trends (IJCOT)*, ISSN: 2249-2593, Vol 2(1), pp 33-38, 2012.
- (J5) **Ray, P. P.**, “Universal Numeric Segment Display for Indian Scheduled Languages: an Architectural View”, *International Journal of Computer Trends and Technology (IJCTT)*, Vol. 2 (2/2), ISSN: 2231-2803, pp.161-166, 2011.
- (J4) **Ray, P. P.**, “OSD: A Source Level Bug Localization Technique Incorporating Control Flow and State Information in Object Oriented Program”, *International Journal of Scientific & Engineering Research (IJSER)*, ISSN : 2229-5518, Vol. 2 (12), pp. 1-6, 2011.
- (J3) **Ray, P. P.**, Banerjee, A., Bag. B., “Debugging Invariant Issues in Pseudo Embedded Program: an Analytical Approach”, *International Journal of Computer Science and Information Technologies (IJCSIT)*, ISSN: 0975-9646, Vol. 2 (2), pp. 780-785, 2011.
- (J2) **Ray, P. P.**, “Web based e-learning in India: the cumulative views of different aspects”, *Indian Journal of Computer Science and Engineering (IJCSSE)*, ISSN: 0976-5166, Vol. 1 No. 4, pp. 340-352, 2010.
- (J1) **Ray, P. P.**, “The green grid saga - a green initiative to data centers: a review”, *Indian Journal of Computer Science and Engineering (IJCSSE)*, ISSN: 0976-5166, Vol. 1 No. 4, pp. 333-339, 2010.

Conference Proceedings

- (C8) Sebastian S., **Ray, P. P.**, Development of IoT Invasive Architecture for Complying with Health of Home, In Proceeding of *I3CS 2015*, Shillong, pp-79-83, 2015.
- (C7) Sebastian S., **Ray, P. P.**, When Soccer Gets Connected to Internet, In Proceeding of *I3CS 2015*,

Shillong, pp-84-88, 2015.

- (C6) **Ray, P. P.**, Home Health Hub Internet of Things (H3IoT): An Architectural Framework for Monitoring Health of Elderly People, *IEEE ICSEMR*, ISBN: 9789380222745, Chennai, 2014.
- (C5) **Ray, P. P.**, Internet of Things based Physical Activity Monitoring (PAMIoT): An Architectural Framework to Monitor Human Physical Activity, In Proceeding of *IEEE CALCON*, Kolkata, pp-32-34, 2014.
- (C4) **Ray, P. P.**, Sharma, A., Rai, R., “MDTRM: Abstraction to Model Driven Tree Reference Model of Internet of Things”, In proceeding of *National Conference on Applied Electronics (NCAE)*, AIT Kolkata, pp-61-64, 2013.
- (C3) Rai, R., Lepcha, C., **Ray, P. P.**, Chettri, P., “GDMA: Generalized Domain Model Architecture of Internet of Things”, In proceeding of *National Conference on Applied Electronics (NCAE)*, AIT Kolkata, pp. 65-68, 2013.
- (C2) **Ray, P. P.**, “Nano Computer Design Based on Intra Body Nanoscale Neuro-Spike Communication: a Nanonetwork Paradigm”, ISBN 978-1-4673-4698-6. In proceeding of *IEEE International Conference on Communications, Devices and Intelligent Systems (CODIS)*, JU, Kolkata, pp. 314-317, 2012.
- (C1) **Ray, P. P.**, Banerjee, A., “Debugging Memory Issues in Embedded Linux: A Case Study”, ISBN: 978-1-4244-8942-8. In proceeding of *IEEE Technological Symposium (TechSym)*, IIT Kharagpur, 2011.

Awards and Fellowships/Achievements

- 2014 Selected as Member of IEEE CSI Chapter Council Executive Body.
- 2013 Summer Research Fellowship Programme (SRFP) **selected** by Indian Academy of Sciences, Bangalore (IAS), Indian National Science Academy, New Delhi (INSA) , and The National Academy of Sciences, Allahabad (NAS).
- 2009-11 Post Graduate Scholarship by All India Council for Technical Education (AICTE).

Exposure to Special Knowledge

Languages: Wiring, System C

Compiler: GCC C, AVR Compiler

Open Source Hardware: Arduino and its variants, Raspberry Pi, Intel Galileo

IoT Operating Systems: Contiki OS, RIOT OS

Professional Memberships

- 2015 Universal Association of Computer and Electronics Engineers (UACEE) (AM1010002745).
- 2014 Association for Computing Machinery (ACM) (5140889).

2013 Global ICT Standardisation Forum for India (GISFI).

2013 International Association of Computer Science and Information Technology (IACSIT)
(80346421).

2012 Institute for Computer Sciences, Social Informatics and Telecommunications Engineering (ICST).

2010 International Association of Engineers (IAE) (110263).

2010 Institute of Electrical and Electronics Engineers (IEEE) (91152489).

June 14, 2015