

# Anandarup MUKHERJEE

## PERSONAL DATA

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PLACE AND DATE OF BIRTH: Burnpur, W. Bengal, India | 18 September 1987  
ADDRESS: SWAN Lab, CSE, Takshashila Building, IIT Kharagpur, India  
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## WORK EXPERIENCE

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Current	Senior Research Fellow at DEPT. OF AGRICULTURE & FOOD ENGINEERING IIT Kharagpur, India
OCT 2014	<i>Increasing water use efficiency through experimental sensor networks</i> Provided technical know-how, implementation and support for deployment and analysis of data gathered from wireless sensor networks, deployed for in-field monitoring of agricultural data. Developed and implemented an IoT- Cloud based infrastructure for integrating and automated analysis of the incoming field data. Designed various smart-phone apps and sensor nodes for low-cost field parameter monitoring.
JUN 2012- OCT 2014	Assistant Professor at UNIVERSITY OF ENGINEERING & MANAGEMENT, JAIPUR, India <i>Dept. of Electronics &amp; Communication Engineering</i> Responsible for teaching as well as administrative assignments. The teaching assignments spanned over theory as well as practical classes. Administrative tasks involved the assignment of acting Head of Department for a period of 2 years from 2013-2015. Oversaw and implemented the setting up and planning of over 7 laboratories, as well as student welfare activities such as workshops, internships and industrial visits.
AUG 2011- MAY 2012	Lecturer at INSTITUTE OF ENGINEERING & MANAGEMENT, KOLKATA, India <i>Dept. of Information Technology</i> Responsible for theory as well as practical assignments. Additional responsibilities included mentoring students and organizing an international conference at the institute, as the <i>Assistant Organizing Secretary</i> , in Jan 2012.
MAY 2009- JULY 2009	Intern at DEFENCE RESEARCH & DEVELOPMENT ORGANIZATION, NEW DELHI, India <i>DESIDOC- (Defence Scientific Information &amp; Documentation Center)</i> Applied various data-mining and visualization techniques for analyzing interdependence between various users and their field of research. The data analyzed was acquired from the DRDO central library, which had information about various scientists and their book issue records. This work culminated in the publication of a magazine article and a research paper.
JAN 2009- FEB 2009	Intern at INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, India <i>Dept. of Computer Sc. &amp; Engineering</i> Implemented various image processing technologies to perform segmentation and thresholding of satellite images, for detection of aircraft in the satellite images.
DEC 2008	Intern at CENTER FOR ELECTRONICS TEST ENGINEERING (CETE) , KOLKATA, India <i>Eastern regional Testing Lab- East, Government of India</i> Learned about various Intel based micro-controllers and micro-processors. Implemented the technologies learned to design an automated traffic light controller using Atmel 89c51 based micro-processor.

## EDUCATION

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DEC 2014- PRESENT	<b>Current</b> PhD Scholar in NETWORKS, <b>Indian Institute of Technology Kharagpur</b> , India 92% <i>Coursework</i>   Major: Information Technology 81% <i>PhD Comprehensive</i>   Major: Information Technology Thesis: "UAV Networks for Mobile Master Node Architecture" Advisor: Prof. Sudip MISRA
MAY 2012	Master of Technology in ELECTRONICS & COMMUNICATION ENGINEERING, <b>West Bengal University of Technology, Kolkata</b> , India Major: Microelectronics & VLSI Design Thesis: "Detection of Arrhythmia using Wavelet Transforms, PCA and Neural Networks" Advisor: Prof. Kamal Kanti GHOSH GPA: 9.38/10
JUNE 2010	Bachelor of Technology in ELECTRONICS & COMMUNICATION ENGINEERING, <b>West Bengal University of Technology, Kolkata</b> , India Thesis: "PC controlled Robotic Arm with Authentication Control" Advisor: Mr. Avishankar Roy GPA: 8.2/10

## ACHIEVEMENTS

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JAN. 2016	Microsoft-ACM Academic Research Summit, Pune, India (Travel Grant: ₹ 13,000)
JAN. 2016	Innovation Challenge, Johnson Controls (Position: 2 <sup>nd</sup> Runner up)
JAN. 2016	Reviewer, IEEE Transactions on Mobile Computing (IEEE TMC)
JAN. 2016	Reviewer, Telecommunication Systems, Springer
AUG. 2015	Head (Membership Development) IEEE Student Branch, IIT Kharagpur, <a href="#">IEEE</a>
OCT. 2015	Reviewer, Telecommunication Systems, Springer
OCT. 2015	Reviewer, IEEE ANTS, Kolkata
OCT. 2015	Special Mention, IEEE PULSE, <a href="#">EMBS PULSE</a>
FEB. 2015	Reviewer, IJCNDs, Inderscience Journals
MAR. 2014	Reviewer, IEEE INDICON, Pune

## PROFESSIONAL AFFILIATIONS

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2015	IEEE Communications Society (ComSoc)	Grad. Student Member
2015	IEEE Computer Society	Grad. Student Member
2015	IEEE Signal Processing Society (SPS)	Grad. Student Member
2015	ACM	Grad. Student Member
2012	IEEE EMBS	Student Member
2011	IEEE	Student Member

## LANGUAGES

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BENGALI:	Mother tongue
HINDI:	Fluent
ENGLISH:	Fluent

## COMPUTER SKILLS

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Basic Knowledge: PHP, HTML, JAVASCRIPT, LINUX, ubuntu, APACHE CLOUD STACK, PERL, WEKA, PAJEK, ANDROID,  $\text{\LaTeX}$   
Intermediate Knowledge: MATLAB, Python, VB, C, Arduino, Embedded C, Latex

## RESEARCH INTERESTS

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1. Unmanned Aerial Vehicle - Control, Tracking and Applications.
2. Networked Robotics.
3. Internet of Things.
4. Smartphones - Activity recognition and Event detection.

## ARTICLES

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1. A.Mukherjee, S. Goswami, "Visualizing Graphs using PAJEK", PC Quest, Enterprise Solutions, Nov. 2010.
2. A. Mukherjee, "Creating VB Macros in MS Word", PC Quest, Developer, Dec. 2010.
3. A. Mukherjee, "Folder Manipulator in VB 6.0", Electronics for You, ISSN No. : 0013- 516x, Sep. 2011.
4. N.Pathak, A. Mukherjee, "NANOENGINEER- A Virtual Nanotechnology Lab", PC Quest, Hands On, Apr. 2013

## JOURNAL PAPERS

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1. A. Mukherjee, S. Misra, N. Daw, D. Paul. "Gesture-based Control and Ex-Situ Stabilization of micro-UAV Platforms". Submitted to: *IEEE Transactions on Control of Network Systems* (May 2016).
2. A. Mukherjee, S. Misra, S. Dey. "An Acoustic-Electromagnetic Medium Switching for Content Critical IoT Sensor Networks". Submitted to: *IEEE Communication Letters* (May 2016).
3. A. Mukherjee, S. Misra, J. Mukhopadhyay, N. S. Raghuwanshi. "A Convolution Neural Network Framework for Network Camera-based UAV Tracking". Submitted to: *IEEE Transactions on Pattern Analysis and Machine Intelligence* (Apr. 2016)
4. A. Mukherjee, S. Misra, P. Mangrulkar. "SmartARM: A Smartphone-based Group Activity Recognition and Monitoring Framework ". Submitted to: *IEEE Communication Letters* (Apr. 2016)
5. A. Mukherjee, S. Misra, P. Khandelwal, "R2D2: Rotating-turret 2D-scanning and Dead-reckoning for Remotely Operated Rovers over Resource Constrained Networks", Submitted to: *International Journal of Communication Systems* (Apr. 2016)
6. A. Mukherjee, S. Misra, N.S. Raghuwanshi. "Unmanned Aerial Sensing and its Scope in Precision Agriculture". Submitted to: *Computers and Electronics in Agriculture*, Elsevier (Mar. 2016).
7. A. Mukherjee, S. Misra, N. S. Raghuwanshi. "Blind Packet-based Source Entity Identification in IoT-Cloud for Non-Critical Environments". Submitted to: *IEEE Transactions on Industrial Informatics* (Mar. 2016).
8. A. Mukherjee, S. Misra, A. Atrish, S. A. Khan. "MiND: Mind Networked Device Architecture for Disabled-Friendly Rehabilitation". Submitted to: *IEEE Transactions on Neural Systems and Rehabilitative Engineering* (Feb. 2016).

9. S. Misra, S. Goswami, C. Taneja, A. Mukherjee, Mohammad Obaidat, "A PKI Adapted Model for Secure Information Dissemination in Industrial Control and Automation 6LoWPANs", *IEEE ACCESS*, vol.3, no., pp.875,889, 2015 doi: 10.1109/ACCESS.2015.2445817 [Link](#)
10. S Goswami, S Misra, C Taneja, A. Mukherjee, " Design and Implementation Analysis of a Public Key Infrastructure- enabled Security Framework for Zigbee Sensor Networks", *INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEMS*, Int. J. Commun. Syst. (2014), Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/dac.2893, Nov 2014. [Link](#)
11. S. Goswami, A. Mukherjee, A. Gupta, M. Kharbanda, P. Soni. "Visualization of Relationship among Library Users based on Circulation Data". *Defence Scientific Information and Documentation Centre Journal of Library and Information Technology (DJLIT)*, Vol. 30, No. 2, ISSN No. : 0974-0643. March 2010. [Link](#)

## CONFERENCE PAPERS

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1. S Goswami, S Misra, C Taneja, A. Mukherjee, "Securing Intra-communication in 6LoWPAN: A PKI Integrated Scheme", *Advanced Networks and Telecommunications Systems (ANTS)*, 2014 IEEE International Conference on , vol., no., pp.1,5, 14-17 Dec. 2014,doi: 10.1109/ANTS.2014.7057265. [Link](#)
2. A. Mukherjee, K. K. Ghosh, "A Noise Independent Approach to QRS- Complex Detection Using CWT", *International Conference on Informatics, Electronics and Vision*. Dhaka, Bangladesh. 18- 19 May 2013(Digital Object Identifier: 10.1109/ICIEV.2013.6572722), p. 1-5, 2013. [Link](#)
3. A. Mukherjee, K. K. Ghosh. "An Efficient Wavelet Analysis for ECG Signal Processing" in 2012 International Conference on Informatics, Electronics and Vision. Dhaka, Bangladesh. 18- 19 May 2012, IEEE Xplore (Digital Object Identifier: 10.1109/ICIEV.2012.6317419), p. 411-415, 2012. [Link](#)

## PATENTS

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Number of Patents under evaluation = 3