

Name: Mr Abhijit Banerjee

Department: Electronics and Communication Engineering

Contact Nos.: 9475367679

Qualifications: M.Tech (Radiophysics and Electronics)

B.Tech (Electronics and Communication Engineering)



Designation: Assistant Professor

Experience (Teaching / Research / Industry, in years):

Teaching: 12 years

Research: 5 years

Industry: 2 years

Date of Joining at the Present Institution: 16/04/2009

Examinations Cleared: GATE

Qualifications Summary (Reverse chronological order):

Degree	Institute	From - To	Subjects
M.Tech	INSTITUTE OF RADIO PHYSICS AND ELECTRONICS (IRPE), University of Calcutta	2006-2008	Radiophysics and Electronics
B.Tech	West bengal University of Technology	2002-2006	Electronics and Communication Engineering

Experience Summary (In chronological order):

Designation,	Organization,	Date From - Date To
Assistant Professor	Dr. B. C Roy Engineering College, Durgapur	2009-Present

Specialization/Research Interest:

Machine Learning,
Reinforcement Learning in Robotics,
Generative Adversarial networks,
Cognitive Robotics

Awards & Recognitions

1. Best Paper “A Gamma-Levy Hybrid MetaHeuristic for HyperParameter Tuning of Deep Q Network” in Conference Computational Intelligence in Pattern Recognition. Advances in Intelligent Systems and Computing, 2019
2. First Prize in “Science and Technological Exhibition (STEX-07), IEEE Student Branch , University of Calcutta
2. West Bengal State Gov Scholarship of Merit , HS
3. West Bengal State Gov Scholarship of Merit , ICSE

Courses taught:**B.Tech:****Theory:**

1. Basic Electronics
2. Digital Electronics
3. Analog Electronics
4. Analog Communications
5. Digital Communications
6. Signals and Systems
7. Microprocessors
8. Neural Networks and Applications
9. Embedded Systems
10. Digital Image Processing

Practical:

1. Basic Electronics
2. Digital Electronics
3. Analog Electronics
4. Analog Communications
5. Digital Communications
6. Signals and Systems

M.Tech:**Theory:**

1. Advanced Digital Communications
2. Pattern Recognition and Machine Learning

Online Mode of Teaching:

Modes:

1. Google Classroom
2. Google Meet
3. Zoom

Sample Links:

<https://drive.google.com/file/d/1ChNHeeWDiB8t49YV1hhFkBVr15zCW4ZL/view?usp=sharing>

https://drive.google.com/file/d/10jY-Ni_uGPLdGvNgRM6xxr4kP3tYTtES/view?usp=sharing

<https://drive.google.com/file/d/1ChNHeeWDiB8t49YV1hhFkBVr15zCW4ZL/view?usp=sharing>

https://drive.google.com/file/d/10jY-Ni_uGPLdGvNgRM6xxr4kP3tYTtES/view?usp=sharing

<https://drive.google.com/file/d/1ChNHeeWDiB8t49YV1hhFkBVr15zCW4ZL/view?usp=sharing>

<https://drive.google.com/drive/folders/1VaCywb9Qhq9HdpNTaT2uSNTzYMr9Gyi3?usp=sharing>

Publications:

Journal:

1. **Abhijit Banerjee**, Dipendranath Ghosh, Suvrojit Das, "Modified firefly algorithm for area estimation and tracking of fast expanding oil spills," Applied Soft Computing, Volume 73, 2018, Pages 829-847, ISSN 1568-4946, doi: <https://doi.org/10.1016/j.asoc.2018.09.024>.
2. Subir Gupta, **Abhijit Banerjee**, Jit Sarkar, Malay Kundu, Sudip Kumar Sinha, N.R. Bandyopadhyay, Subhas Ganguly, Modelling the steel microstructure knowledge for in-silico recognition of phases using machine learning, Materials Chemistry and Physics, Volume 252, 2020, 123286, ISSN 0254-0584, doi: <https://doi.org/10.1016/j.matchemphys.2020.123286>. (<http://www.sciencedirect.com/science/article/pii/S0254058420306568>)
3. Gupta, S., Sarkar, J., **Banerjee, A.** et al. Grain Boundary Detection and Phase Segmentation of SEM Ferrite–Pearlite Microstructure Using SLIC and Skeletonization. J. Inst. Eng. India Ser. D 100, 203–210 (2019). <https://doi.org/10.1007/s40033-019-00194-1>
4. Dey, P.K., **Banerjee, A.**, Ghosh, D.N., & Mondal, A.C. (2014). AHP-Neural Network Based Player Price Estimation in IPL. International Journal of Hybrid Information Technology, 7, 15-24. DOI: 10.14257/ijhit.2014.7.3.03

Conference:

1. **Abhijit Banerjee**, Dipendranath Ghosh, Suvrojit Das
Repulsion-Propulsion Firefly Algorithm with Fast Convergence to Solve Highly Multi-Modal Problems.
6th International Conference on IT Convergence and Security, ICITCS 2016, Prague, Czech

- Republic, September 26, 2016
 pages:1 - 6, 2016
 DOI – 10.1109/ICITCS.2016.7740365
2. **Banerjee A.**, Ghosh D., Das S. (2020) A Gamma-Levy Hybrid MetaHeuristic for HyperParameter Tuning of Deep Q Network. In: Das A., Nayak J., Naik B., Pati S., Pelusi D. (eds) Computational Intelligence in Pattern Recognition. Advances in Intelligent Systems and Computing, vol 999. Springer, Singapore
 DOI: https://doi.org/10.1007/978-981-13-9042-5_54
 3. **A. Banerjee**, D. Ghosh and S. Das, "Evolving Network Topology in Policy Gradient Reinforcement Learning Algorithms," *2019 Second International Conference on Advanced Computational and Communication Paradigms (ICACCP)*, Gangtok, India, 2019, pp. 1-5, doi: 10.1109/ICACCP.2019.8882916.
 4. A. Pathak, K. Jogender and **A. Banerjee**, "Evaluation of Reverse Ellitism Firefly Algorithm on the CEC2013 Real Parameter Single Objective Optimization Benchmark Functions," *2018 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, Gorakhpur, 2018, pp. 1-6, doi: 10.1109/UPCON.2018.8596951.

Supervision of Ph.D/M.Tech / B.Tech Projects:

Projects (B.Tech):

1. Optimum Placement of 2.4ghz-5.6Ghz WiFi Access Point Placement from Emperical Survey Data. Md.azim akram 12000312056
 Mohammad asif raza 12000312059
 Alok kumar 12000312008
 Ravi goswami 12000312076
 Sudarshan kumar 12000312113
2. Air Quality sensor fusion based IoT Web Server MS SUPRIYA 12000314129
 SHREYA SHRUTI 12000314134
 LAXMI KUMARI 12000314128
 ABHILASHA KUMARI 12000314118
3. Accelerometer based hand gesture recognition system REENA KUMARI 12000314076
 AISHARYA MUKHERJEE(L) 12000315126
 GAURI KUMARI(L) 12000315128
 SANJU KUMARI(L) 12000315132
 SMRITI ROY(L) 12000315134
4. Design & Control of an Articulated Robotic Arm DEBOPAM SINHA 12000314028
 SHUVRO SHANKAR BANERJEE 12000314091
 BERENTIUS MARANDI(L) 12000315127
5. HEXAPOD ADAPTIVE GAIT USING REINFORCEMENT LEARNING AKASH PATHAK 12000315005
 DEBMALYA PANDAY 12000315033
 SONAL DAS 12000315106

ARNAB DUTTA 12000315021
Md. MUKHTAR ALAM 12000315059
SUDARSHANA GUPTA 12000315111

6. Depth Image Reconstruction from single RGB Image using Generative Adversarial Network.

Prashant Kumar Shubham 12000316066

BHANU RAJ 12000316112

Md Yaseen Saifullah 12000316087

7. Real-Time Prediction of Disruptive Events from Live Tweeter Feeds using LSTM.

MEGHA SINGHA 12000316086

Animesh Jha 12000317011

Prince kumar 12000316064

Mistu Sebait 12000316085

ABHISHEK SUMAN 12000316129

Invited Lectures:

1. Invited Speaker in IET Annual Symposium, Topic: Engineering in Road Safety
2. Invited Speaker in Aryabhata Robotics Club,Asansol Topic: machine Learning for Articulated Robotics.

Participation in seminar/conference/symposium/workshop/discussion meeting

1. **Abhijit Banerjee**,Dipendranath Ghosh,Suvrojit Das

Repulsion-Propulsion Firefly Algorithm with Fast Convergence to Solve Highly Multi-Modal Problems. 6th International Conference on IT Convergence and Security, ICITCS 2016, Prague, Czech Republic, September 26, 2016

2. **Banerjee A.**, Ghosh D., Das S. (2020) A Gamma-Levy Hybrid MetaHeuristic for HyperParameter Tuning of Deep Q Network. In: Das A., Nayak J., Naik B., Pati S., Pelusi D. (eds) Computational Intelligence in Pattern Recognition. 2019, IEST, Shibpur

3. **A. Banerjee**, D. Ghosh and S. Das, "Evolving Network Topology in Policy Gradient Reinforcement Learning Algorithms," *2019 Second International Conference on Advanced Computational and Communication Paradigms (ICACCP)*, Gangtok, India, 2019

4. Master Class on Machine Learning, CII,14 June 2020

5. Webinar on Higher Technical Education in Post nCOVID Scen... @ Sat Jun 13, 2020 10:45am - 12pm (IST)

6. Seminar on Enterprise Architecture its Security, BCREC, 2020

7. Seminar on "TEACHING LEARNING SKILL DEVELOPEMENT", IEEE, BCREC, 2019

8. International Seminar on Science, Culture and Social Change,2007

9. IEEE, WIE National Symposium on Emerging Technologies, 2007

10. One day workshop in “Advances in Communication and Electronic Technology” (COMET-06, UNIVERSITY OF CALCUTTA

Participation in faculty development programmes

1. FDP on Modern Trends in Electrical Engineering from June 23-27, 2020 organized by EE department, Dr. B. C. Roy Polytechnic
2. Moodle- An ICT Based Learning Management System (LMS) to Conquer the Academic Lock Down, In Association with IIT-Bombay Spoken Tutorial And Electronics and Communication Engineering Department of Dr. B. C. Roy Engineering College, Durgapur. Date: 21-25th April, 2020
3. A Seminar on "Teaching and Learning Skill Development" was organized at the BCREC on, 22nd August 2019.
4. Attended 3 day FDP with hands on Workshop on Full Custom VLSI Design on Mentor Graphics from 15-17, May 2019 in BCREC ECE Department.
5. CEP course, IIT Bombay “Introduction to Robotics”, 2011

Organization of events (Dr. B. C. Roy Engineering College)

1. Annual Technical Festival – 2006
2. Annual Technical Festival – 2007
3. Annual Technical Festival – 2008
4. Annual Technical Festival – 2009
5. NCETSTEA 2020: 2020 National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTEA)
6. Annual Science Day – 2019
7. Annual Cultural Fest – 2018
8. Annual Cultural Fest – 2019
9. SEMINAR ON “ADVANCES IN NANO-SATELLITE TECHNOLOGY”, 2015
10. WORKSHOP ON “INTERNET OF THINGS USING MSP430 ULTRA LOW POWER MICROCONTROLLER & CC3100 BOOSTER PACK”, 2016
11. Seminar on “integration between Global navigation Satellite Systems (GNSS) and Wireless Communication and Networking Systems”, IGSwN, 2018
12. IEEE, WORKSHOP “MICROWAVE ENGINEERING AND APPLICATIONS”, 2015
13. TECHNICAL WORKSHOP ON “RECENT TRENDS IN MACHINE INTELLIGENCE, DATA MINING AND SOFT COMPUTING TECHNIQUES AND ITS IMPACT ON RESEARCH AND

Participation in administrative committees (selected)

NBA Committee (Module Cordinator)

NAAC Committee (Student Council Member)

Virtual Labs (Convener)

Research and Development Committee (Member)

Texas instrument Innovation Lab (In-Charge)

E-Cell (Treasurer)

Departmental Project Committee (Cordinator)

Departmental Feedback Committee (Cordinator)

Departmental Computational Resource Management Committe (Cordinator)

Annual Technical Festival - 2006 (Convener)

Annual Technical Festival - 2007 (Convener)

Annual Technical Festival - 2008 (Convener)

Annual Technical Festival - 2009 (Convener)

Annual Science Day - 2019 (Convener)

Annual Cultural Fest - 2018 (Member)

Annual Cultural Fest - 2019 (Treasurer)

Project Ideas Submitted to Govt. Agencies/ On-going Projects / Research Ideas under preparation & execution

"Effect of Black Carbon Emission on Crop Growth and Climate Change Using Nano Satellite IR Spectography" submitted unde Level '0' category under the PG Colleges, FIST program of DST

Membership of professional bodies: IEEE, IETE, IEI, CSI, MGMI etc.

IEEE,IET,CSI