

Name: Dr. Tribeni Prasad Banerjee

Department: Electronics and Communication Engineering

Contact Nos.: 9732015656

Qualifications: Ph.D, M-Tech, BE

Designation: Assistant Professor

VIDWAN ID: [125151](#)

Experience (Teaching/ Research/ Industry, in years): 17

Date of Joining at the Present Institution: 02/07/2013 (FN)

Examinations Cleared:

1. GATE for Masters Program-2004
2. CSIR-SRF for Ph.D Program-2008

Qualifications Summary (Reverse chronological order):

Degree	Institute	Year	Subjects
Ph.D	Jadavpur University	2013	Ph.D Engineering from Electronics and Tele-Communication Engineering
M-Tech	Jadavpur University	2008	Electronics and Tele-Communication Engineering
B-Tech	Burdwan	2004	Electronics and Communication Engineering
H.S(12th)	W.B.B.H.S.E	2000	Higher Secondary
Madhyamik (10 th)	W.B.B.S.E	1998	Secondary

[Experience Summary \(In chronological order\):](#)

1. Assistant Professor (AGP-III) in BCREC, from July, 2020-till.
2. Assistant Professor (AGP-II) in BCREC, from July, 2013-2020.
3. **Full time research scholar (CSIR-SRF)** in ETCE department of **Jadavpur University** for Ph.D from May, 2010- April, 2013.
4. **Research Associates/Senior Project Fellow** in CSIR-CMERI from 2008-2011.
5. Assistant Professor in Techno India College of Technology, New Town, Rajarhat, Kolkata.
6. 1 years as an Assistant Professor in CIEM, Tollygunge, Kolkata
7. **Guest Lecturer** in Jadavpur University, Kolkata.
8. **Guest Lecturer** in Heritage Institute of Technology, Kolkata.



Specialization/Research Interest:

1. Assistive Technology,
2. IoT in Health Care,
3. Consumer Electronics,
4. Machine Learning in VLSI,
5. Cyber Physical System,
6. Predictive System and Modeling for Fault Tolerant System Design.

Awards & Recognitions:

1. Appointed as **Exam-Observer** of IIT-Madras **BSc -degree** exam in 2021.
2. Appointed as **Exam-Observer & Institute Representative (IR)** for IIT Kharagpur for IIT-Madras **NPTEL Exam** in 2016, 2017, 2018 & 2019.
3. **Appreciation certificates of IIT-Bombay** as an active Nodal officer from Easter region and for holding software training workshop and arranging the training through ST-IIT Bombay for our **BCREC** students.
4. **Certificate of Appreciation** and award from Texas Instrument as a coordinator of all India Drishti contest in 2019.
5. Elevated as highest **IEEE Senior Member**, 2018.
6. Elevated as **Senior Member**, Computational Intelligence Society (IEEE-CIS), USA, 2018.
7. Appreciated for being an active local chapter and all India Rank **AAA** as a SPOC of BCREC, for National Programme on Technology Enhanced Learning (NPTEL) in 2019.
8. **Senior Research Fellowship (SRF)** from **Council for Scientific Industrial Research (CSIR)-MHRD**, in the year of 2011.
9. Obtained UGC-JRF for doing Masters Program from University for Potential for Excellence (UPE), by UGC.

Courses taught:**Under Graduate:**

1. [ES-101:Basic Electronics \[2013-2014, 2019, 2020\]](#)
2. [EC-802D: Audio and Speech Processing \[2013-2016\]](#)
3. [EC-801B: Digital Image Processing\[Electronics and Communication Engineering Department\]\[2016\]\[2019\]](#)
4. [EE-705D: Digital Image Processing \[Electrical Engineering Department\] \[2015,2016,2019\]](#)
5. [EC-704: Embedded System \[2016, 2018, 2020\]](#)
6. [EC-602: Digital Signal Processing \[2017\]](#)
7. [EC-604B: Information Theory and Coding\[2018\]](#)
8. [Program Elective Paper: \(\(PE\)-EC505A\)](#)
 1. [Information Theory and Coding \[2020\]](#)
 2. [Nano Electronics](#)
9. [EE- Communication Engineering \(OE-601B\) \[2021\]-3L](#)
10. [ECE- Organizational Behavior \(HU-801A\)\[20021\]-2L](#)

UG & PG Lab:

1. [EC-692: Digital Signal Processing Lab.](#)
2. [EC-792: VLSI Design Lab](#)

Post Graduate: [Syllabus_EC_M-Tech]

1. [MCE 103-Advance Digital Signal Processing \[2013,2015,2017,2020\].](#)
2. [MCE-201:Photonics and Optical Communication \[2016\]](#)

3. MCE-Pattern Recognition and Machine Learning [2021]

Online Mode of Teaching:

Google Meet mostly adopted some of the resource can be found in my Home Page:

<https://sites.google.com/site/tribenibanerjee/>

Teaching Materials & Tutorials

<https://sites.google.com/site/tribenibanerjee/homepage-of-dr-banerjee/home-page/teaching-research/course-meterial?authuser=0>

Some external link can be used for extra resource:

<https://sites.google.com/site/tribenibanerjee/homepage-of-dr-banerjee/my-favorite-links?authuser=0>

Publications:

Journal:

[J1] T.P. Banerjee, S. Das, “*A Support Vector Machine based Multi-Sensor Data Fusion for Motor Fault Detection*”, paper published in Information Sciences, Volume 217, 25 December 2012, Pages 96-107.

[J2] T.P. Banerjee, A. Konar, S. Das, A. Abraham “*An Intelligent Loss Less Data Compressor Implementation using Reconfigurable Hardware*”, paper published in International Journal of Information Hiding and Multimedia Signal Processing Vol. 2, No. 1, pp. 41-50, January 2011.

[J3] T.P. Banerjee, S. Das “*Fractional Order Fault-Tolerant Control of Fuel Shut-off Valves for Commercial Aircrafts - An Adaptive Differential Evolution Approach*” under review in IEEE Transaction on Industrial Electronics.

[J4] T.P. Banerjee, S. Das *et.al*, “*Intelligent Fault signal Classifier in Dynamic Environment using SVM*”, under review in International Journal of Neural Network World Springer in 2019.

[J5] T.P. Banerjee *et.al* paper submitted in IEEE Transaction on Recent Trends on *IEEE Transactions on Emerging Topics in Computational Intelligence* in 2020.

Conference:

[C1] **T.P. Banerjee**, S.Saha, A.Konar Paper Accepted and Presented on “Robotics Navigation and Object shape recognition using optimum Infrared Sensor” Published in the Proc. of the National Conference on Recent Trends in Information Systems (ReTIS’06), organized by Computer Science Department , Jadavpur University, held at Jadavpur University on 14-15 July 2006.

[C2] A.Roy, S.Das, **T.P. Banerjee** Paper Accepted “Population-Variance and Explorative Power of Harmony Search: An Analysis” published in Proc. Second National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries (MATEIT-2008) held in New Delhi, India on 26-28 September, 2008.

[C3] S.Das, A.Biswas, S.Dasgupta, **T.P.Banerjee** Paper Accepted “On Stability of the Chemotactic Dynamics in Bacterial Foraging Optimization Algorithm” published in Proc. Second National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries (MATEIT-2008) held in New Delhi, India on 26-28 September, 2008.

[C4] **T.P.Banerjee** , A.Konar ,S Das Paper Accepted In the “National Conference on Research & Development in Hardware & Systems (CSI-RDHS 2008)” organized by the Computer Society of India held at Kolkata on June 20-21, 2008.

[C5] **T.P.Banerjee** , A.Konar Paper Accepted, presented and published and get First Prize in National Level Student Technical Paper presentation contest in the Conference PRATIVA’08 in the domain of VLSI and Data Compressor “Digital Design and Implementation in FPGA for real time Video Data compressor Design for high Speed Data Communication Application” organized by NIT Rourkela and Padmanava Collage of Engineering held at Rourkela on 23rd February’2008.

[C6] A.Chkraborty ,S. Saha, **T.P.Banerjee** , A.Konar Paper Accepted “Behavioral Cooperation of Two Robots in a Transportation Problem” it published in the Proc. of the National Conference on Recent Trends in Information Systems (ReTIS’08), organized by Computer Science Department, Jadavpur University, held at Jadavpur University on 7-9th February, 2008.

[C7] J. Roychoudhury, **T.P.Banerjee** , A.K.Bhattachrya Participation and Presented Paper in the National Conference on “Advance in computational Intelligence Applications In Power Control, Signal Processing and Telecommunications” during March 20 -2 2,2009 in Bhubaneswar.

[C8] **T.P.Banerjee** , A.Konar Paper Accepted in International Conference ICCR’08 in the domain of VLSI Design “CRC Implementation for High Speed Image Processing and Multimedia Application”,India ,2008.

[C9] S.Das, **T.P.Banerjee** and B.K.Panigrahi Paper Accepted “Detecting Circular Shapes from Images with Adaptive Bacterial Foraging Algorithm” Published in The Sixteenth International Conference on Advanced Computing and Communication (ADCOM’08) held at Anna University, on 15th -17th December,2008,Chennai.

[C10] S.Das,Sambarta Dasgupta Arijit Biswas and **T.P.Banerjee** ,Paper Accepted “Stability Analysis of the Chemotactic Dynamics in Bacterial Foraging Optimization Algorithm”Published in The Sixteenth International Conference on Advanced Computing and Communication (ADCOM’08) held at AnnaUniversity, on 15th -17th December,2008,Chennai.

[C11] Joydeb Roychoudhury, **T.P.Banerjee** , and A. Bhattacharya, in the International Conference on Bio Inspired Computing Application 2009 (BiCA-09),Bhubaneswar, published in the Proc. of the IEEE computer society, on December 2009.[PDF].

[C12] **T.P.Banerjee** , A. Konar and J. Roychoudhury Paper Accepted in Second International Conference on Emerging Trends in Engineering & Technology (ICETET-09) G. H. Raisoni College of Engineering, Nagpur, India Proceedings of ICETET 2009 will be published by IEEE Computer Society,USA.[PDF].

[C13] **T.P.Banerjee**, Amit Konar, and Ajith Abraham, in the 8th International Conference on Computer Information Systems and Industrial Management Applications(CISIM-2009) December 09-11, 2009 Coimbatore, India, Proceedings of CISIM 2009 will be published by IEEE Computer Society.

[C14] Joydeb Roychoudhury, **T.P.Banerjee**, and A. Bhattacharya, in the 8th International Conference on Computer Information Systems and Industrial Management Applications(CISIM-2009) December 09-11, 2009 Coimbatore, India, Proceedings of CISIM 2009 will be published by IEEE Computer Society.[\[PDF\]](#).

[C15] Joydeb Roychoudhury, **T.P.Banerjee**, and A. Bhattacharya, Paper in The International Conference Hybrid Intelligent System-2009 (HIS-2009) China, on Design Methodology of a Fault aware controller – Through a incipient Fault Diagonizer ” for published in the Proc. of the IEEE computer society , on August 2009.[\[PDF\]](#).

[C16] **T.P.Banerjee** , S. Das et.al, "Hybrid Intelligent Predictive Control System for High Speed BLDC Motor in Aerospace Application", Paper Accepted in 3rd International Conference on Emerging Trends in Engineering and Technology (ICETET-2010), published by IEEE Computer Society,USA. [\[PDF\]](#).

[C17] **T.P.Banerjee** , S. Das et.al, "Implementation A Hybrid Fault Signal Classification by Multi Sensor Data Fusion Mechanism"Paper Accepted in International Conference on Swarm, Evolutionary and Memetic Computing (SEMCCO- 2010), published by Springer Proceedings (LNCS), Springer.

[C18] **T.P.Banerjee** , [Swagatam Das](#): Statistical and Fusion Based Hybrid Approach for Fault Signal Classification in Electromechanical System. [SEMCCO \(2\) 2011](#): 287-293 [\[PDF\]](#)

[C19] **T.P.Banerjee** , Swagatam Das and Ajith Abraham, Design of an Optimized Intelligent Controller of Electromechanical System in Aerospace Application, Proceedings of the Eleventh International Conference on Hybrid Intelligent Systems (HIS), Malacca, Malaysia, IEEE, ISBN:978-1-4577-2150-2, pp. 50-54, 2011.[\[PDF\]](#)

[C20] **T.P.Banerjee** , Suman Saha, Swagatam Das and Ajith Abraham, An Application of Fractional Intelligent Robust Controller for Electromechanical Valve, Proceedings of the World Congress on Information and Communication Technologies, Mumbai, India, ISBN: 978-1-4673-0125-1, IEEE, pp. 368-372, 2011.[\[PDF\]](#)

Book: Nil

Book Chapter:

[CH1] **T.P.Banerjee**, [Swagatam Das](#): Statistical and Fusion Based Hybrid Approach for Fault Signal Classification in Electromechanical System. [SEMCCO \(2\) 2011](#): 287-293.

[CH2] **T.P.Banerjee**, S.Das in "Implementation of a New Hybrid Methodology for Fault Signal Classification Using Short -Time Fourier Transform and Support Vector Machines"published in Springer Berlin / Heidelberg in [Advances in Soft Computing](#) Series Volume 73/2010,pp 219-225,ISBN:978-3-642-13160-8.[\[Springer Book Chapter\]](#).

[CH3] **T.P.Banerjee**, J. Roychoudhury, and S.Das in "Fuzzy Rule Based Intelligent Security and Fire Detector System"published in Springer Berlin / Heidelberg in [Advances in Soft](#)

[Computing](#) Series Volume 63/2009,pp 45-51,ISBN:978-3-642-04090-0 . [\[Springer Book Chapter\]](#)

[CH4] **Tribeni Prasad Banerjee**, [Swagatam Das](#): Intelligent Fault Tracking by an Adaptive Fuzzy Predictor and a Fractional Controller of Electromechanical System - A Hybrid Approach. [SEMCCO \(2\) 2013](#): 574-582. [\[LNCS Book Chapter\]](#)

[CH5] **T.P.Banerjee**, A Abraham in "A Support Vector Machine Based Approach to Real Time Fault Signal Classification for High Speed BLDC Motor" *Advances in Intelligent Systems and Computing (AISC)*, vol 736, pp-836--845, Springer, Cham, 2018.[\[AISC Link\]](#)

[CH6] Subrata Jana, **Tribeni P Banejee** (2020) Graph Based Approach for Image Data Retrieval in Medical Application. [In Cognitive Computing in Human Cognition. Learning and Analytics in Intelligent Systems](#), vol 17. Springer, Cham. [\[DoI\]](#)

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

For Ph.D

1. Name of the student, Name of the supervisor, " Title of the thesis", Year , Name of the university (completed)
2. Name of the student, Name of the supervisor, " Title of the thesis", Year, Name of the university (Registered)

Projects:

1. Name of the student/s (with university roll number), Name of the supervisor, " Title of the Project / thesis" , Year (only final year 8th Sem Project for B.Tech and Thesis for M.Tech)

Invited Lectures:

Topic of the lecture, Name of the event, organized by, Date

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

1. **Chairing the Session in International Conference for Convergence in Engineering (ICCE 2020)** in collaboration with IEEE (IEEE Conference Record 50343), IEEE PES and IEEE COMSOC in 2020.
2. Participated in **Webinar** Designing with Versal ACAP Architecture and Methodology held on 22nd Sep 2021, by Sandeepani School of Embedded System Design, Bangalore.
3. Participate for **Online Webinar** organized by IEEE Student Branch of Dr. B.C.Roy Engineering College, Durgapur in association with IEEE Kolkata Section on "How to Write an Effective Research Paper" dated April 16, 2021.
4. Participate for **5 Days Online International Webinar** on "**Post Corona Era Dimensions in Education**" held during the period from **30-05-2020 to 04-06-2020**.
5. Participated in the webinar titled "Sensor & Advanced Data Acquisition System" on 18 June, 2020 **Organized By Maulana Abul Kalam Azad University Of Technology, West Bengal, India**
6. Participated in the webinar entitled "Data Science and Applications: Present and Future" held on 30 June, 2020 **Organized By Maulana Abul Kalam Azad University Of Technology, West Bengal, India.**

7. Attended SCRS Lecture Series on Soft Computing on "Complex Real Parameter Optimization - Differential Evolution and Beyond " organized by Soft Computing Research Society, New Delhi from July 13, 2020 to July 15, 2020.
8. Participated in **Two Days** Webinar on "*Emerging Trends in Electronics and Communication Engineering*" organized by Department of Electronics and Communication Engineering, Jalpaiguri Govt. Engineering College, West Bengal, India on 29/06/2020-30/06/2020 using Google Meet platform.
9. Participated in One Day International Seminar On "RESEARCH METHODOLOGY - CONTEMPORARY CHALLENGES (RMCC 2021)" Organized by Assam University, Silchar in Technical Co-sponsorship with IEEE Kolkata held on **28th September, 2021**.

Participation in faculty development programmes

1. Participated in the **Three days** workshop "*Embedded Systems - An Application Driven Approach*" organized by the **All India Council for Technical Education (AICTE)**, ATAL Academy, STMicroelectronics and Arm Education, from August **25th- 27th 2021**.
2. **Completed a Global Online Certification Course on Business and Operations Analytics'** conducted by the **National Institute of Industrial Engineering (NITIE), Mumbai**, in association with Prof. David Simchi-Levi (Director, Data Science Lab and Professor - Business and Supply Chain Analytics at Massachusetts Institute of Technology (MIT), USA) from **3rd July, 2021 to 5th September, 2021**.
3. Dr. Tribeni Prasad Banerjee Participated in Online Training of the IEEE Explore Digital Library conducted in Dr. B. C. Roy Engineering College, Durgapur online on 13/05/2020.
4. Participation Certificate for AICTE-ISTE sponsored Online Induction/Refresher Programme (2nd Phase) on "**Advanced VLSI Design Using Microwind**" organized during **06th May to 12th May 2021**.
5. Participated One Week Online FDP on "Higher Education 2020-Requirements and Expectations" organize by IQAC of TPCT College of Engineering, Osmanabad from 8th July-12 July,2020.
6. Participated and has successfully completed the course "*Learning Physics Through Simple Experiments*" organize by **Centre for Continuing Education of IIT Kanpur** from **April 2 to June 10, 2020**.
7. Participated in the one week Faculty Development Programme on "**Emerging Trends in Nano-Electronics (ETNE 2020)**" at "Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur held from **21/09/2020 to 25/09/2020**.
8. Completed AICTE-ISTE approved orientation/refresher Program on "**Advance VLSI Design Using Microwind**" at Dr. Rajendra Gode Institute of Technology & Research, Amravati organized during **06th May to 12th May 2021**.

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

1. Organize an online Webinar in association with IEEE Student Branch of Dr. B.C.Roy Engineering College, Durgapur & IEEE Kolkata Section on "How to Write an Effective Research Paper" dated April 16, 2021.
2. 5 Days FDP Program on "Moodle- An ICT Based Learning Management System (LMS) to Conquer the Academic Lock Down" is associated with IIT Bombay and the "Electronics and

Communication Engineering Department" of Dr. B.C.Roy Engineering College, Durgapur from 21-25th April, 2020.

3. Organize a 3 Days hands on workshop and faculty development program (FDP) on “*Full-Custom VLSI Design Faculty-Development-Program (FDP) on Mentor-Graphics (HEP-I & HEP-II)*” on **15-17th May 2019** in ECE department, BCREC.

4. Organize online technical contest for student (Drishiti) by Texas Instrument, USA under Texas Instrument University Program on 07/02/2019 & 09/02/2019 in Dr. B. C. Roy Engineering College.

Participation in administrative committees (selected):

Departmental activities:

1. **Chief-Coordinator** of MOOCs for BCREC- from January, 2018.
2. **Single Point of Contact (SPOC)** of MAKAUT for MOOCs from BCREC, from July, 2019.
3. **Single Point of Contact (SPOC)** of BCREC, for National Programme on Technology Enhanced Learning (NPTEL)- from January, 2016.
4. **Nodal Officer** of **IIT-Bombay Spoken Tutorial** Project from January, 2016.
5. **Training Coordinator**-ECE Department-(from 2015-till).
6. Member of NBA Committee.

Outside Interaction activities while at BCREC:

Editorial Activity:

- Serving as **Publication Chair** in BCREC National Conference.
- **Editor** of ICSES Transaction on Evolutionary and Meta-heuristic Algorithm.
- **Editor** of ICSES Transactions on Image Processing and Pattern Recognition (ITIPPR)
- **Guest Editor** of American Journal of Embedded Systems and Applications.
- **Associate Editor in BCREC BEST Journal from 2020-till.**
- Associate Editor in BCRCJ Journal from 2021-till.

Committee Member:

- **I have been serving as an Program Committee member** of Special Session Track Cyber Physical Systems and Social Networks (CSN) in IEEE International Symposium on Smart Electronic Systems (IEEE-iSES, formerly IEEE-iNIS), 17 – 19 December 2018, Hyderabad, India.
- **Technical Committee Member** of an International Conference on Computing Communication and Security (ICCCS 2018) which is a premier conference in the computer and communication fields an IEEE Nepal Subsection Conference, held in Kathmandu, Nepal during October 25-27, 2018.[ICCCS-2018]
- I have been appointed as Publicity **Committee Member** in 4th International Conference on Advances in Computing and Communication Engineering (ICACCE'2018) organize by IEEE France Section.

- I have honored to serve as a **Session Chair** in International Conference in System Design and Application (ISDA, 2017), in South Asia University, New Delhi, 2017.
- I served as a **Technical Committee Member** of Intelligent Systems Applications (ISATC) of the Computational Intelligence Society (CIS) of the IEEE in 2015.
- I also served as a **Technical Program Committee member** of International Association for Pattern Recognition (IAPR) (from 2014-)
- Elected as an **International Advisory Board Member** of The 18th Asia Pacific Symposium on Intelligent and Evolutionary Systems (IES, 2015), in 22-25th of November in Bangkok, Thailand.
- Elected as an **International Advisory Board Member** of The 18th Asia Pacific Symposium on Intelligent and Evolutionary Systems (IES, 2014), 10-12th November 2014, Singapore.

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

1. Department of Science and Technology (DST), in Govt of West Bengal in the year of 2019 as a CO-PI.
2. AICTE-MODROBS for VLSI lab.

Membership of professional bodies.

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE), USA.
- Senior Member, Computational Intelligence Society (IEEE-CIS), USA.
- [Special Task Force Member \(IEEE WCCI'18\) in Memetic Computing Society.](#)
- International Advisory Board Member of [Asia Pacific Symposium on Intelligent and Evolutionary Systems, IES-2014-](#)
- Resource Member [A Special Interest group of Center for Hybrid and Embedded Software System of Berkeley University popularly known as \[CHESS\].](#)
- [Member](#) of International Engineering and Technology Institute (IETI), Hong Kong.
- Technical Committee Member of [ISATC of CI](#) Society of the IEEE from 2014.
- Core Team Member for Special Interest Group (in Signal Processing) of MIR Lab, USA, 2018-till.
- Member of International Computer Science Society (ICSES) from 2017-till.
- Member of [MIR Lab](#) (A Global Machine Intelligence Research Labs) from 2012-till.
- Member of [WFSC Young Researcher Committee](#), 2011.
- Member of International Association of Engineers (IAENG), an International Association for the Engineers and the Computer Scientists.