



Dr. Rituparna Mukherjee

Assistant Professor and Research Enthusiast

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Location - Kolkata, India

Dynamic, dedicated & multi-faceted professional with experience in Academics for Under-graduate and Post-Graduate courses with a keen eye on Research on Sustainability and Grid solutions.

PROFILE SUMMARY

- ❖ A consummate **Innovation & Transformation academician**, with motive of encouraging to think out of the box and beyond the written syllabus.
- ❖ Conversant and confident in advanced **Machine Learning Algorithms and Artificial Intelligence** methodologies.
- ❖ Excellent tutor and guide for Under-Graduate and Post Graduate courses in **Power systems & Control Systems**.
- ❖ Strong experience set of co-ordination and collaboration for AICTE and NAAC accreditation norms audit management.
- ❖ Have strong experience in grooming and guiding Under-graduate and Post Graduate students for Campus placements and Industry Orientations.
- ❖ Have presented several Research Papers in International and National Level Conferences.
- ❖ **Project Management and Vendor Co-ordination** experience for telecom industry projects.

Core Competencies

Academics, Research Methodology, Problem Solving Approach, Inter-Departmental Collaboration



Domain

Electrical Engineering, Power System, Control Systems, Renewable Energy



Education

<u>Degree/ Examination</u>	<u>College/School</u>	<u>University/Board</u>	<u>Year of Passing</u>	<u>DGPA Or Percentage</u>
Ph.D	Indian Institute of Engineering Science and Technology, Shibpur	IEST, Shibpur	2022	Completed
M.TECH	Netaji Shubhash Engineering College, Garia	West Bengal University of Technology.	2012	8.96
B.TECH (ELECTRICAL)	Hooghly Engineering & Technology College.	West Bengal University of Technology.	2009	8.24
Higher Secondary	Belur High School	West Bengal State Board of Education	2005	71.2
Madhyamik	Debiswari Bidyatan	West Bengal State Board of Education	2003	77.13



PhD Thesis

- ❖ Registered for Ph.D (Engg) in the Dept. of EE, IEST, Shibpur, Howrah as a part time scholar under guidance of Dr. Abhinandan De.
- ❖ **Date of Enrollment: 22-07-2013 → Date of Registration: 24-06-2015 → Date of Defense: 05-01-2022**
- ❖ **Topic of Research: Real Time Security Assessment of Power System using Pattern Recognition and Machine Learning Approach.**
- ❖ Published 1 conference paper, 1 book chapter on Springer Nature and 2 journal papers on IEEE system Journal and Electrical Engineering Springer.



Patents

- R Mukherjee, A Dhar, S Adhikari and S Som **“Line Criticality Based Dynamic Security Assessment of Power System using Pattern Recognition approach”**, Date of Filing – 4th September, 2023, Application Number – 202331059420A
- R Mukherjee, A Dhar, S Adhikari and S Som **“Model Predictive Control for Power System Dynamic Security Assessment”**, Date of Filing – 23rd January, 2024, Application Number – 202431004718 A
- R Mukherjee, A Dhar, S Adhikari and S Som **“Transient Stability Based Security State Classification of Power System Networks using Kohonen’s Neural Network”**, Date of Filing – 25rd January, 2024, Application Number – 202431005375 A



Publications

• Publications in Refereed Journals

- R. Mukherjee and A. De, **“Development of an Ensemble Decision Tree-Based Power System Dynamic Security State Predictor”**, IEEE Systems Journal (SCI indexed), in *IEEE Systems Journal*, vol. 14, no. 3, pp. 3836-3843, Sept. 2020, doi: 10.1109/JSYST.2020.2978504.
- R. Mukherjee and A. De, **“Real-time dynamic security analysis of power systems using strategic PMU measurements and decision tree classification”**, Electrical Engineering, Springer, (SCI indexed), (2020). doi.org/10.1007/s00202-020-01118-z.
- R Mujumdar, S Ghosh and R Mukherjee, **“Transient Analysis of Single-Phase Transformer Using State Model”**, published in the proceedings of International Journal of Innovative Research in Science Engineering and Technology (IJIRSET 2016) vol 5, issue 3 march 2016.
- R. Mukherjee, A. De, P. K. Saha, S. D. Mukherjee, A. Dhar, and S. Adhikari, **“A Convolutional Neural Network based Pattern Classification Approach for Dynamic Security Assessment with Inadequate Energy Sources”**, jmmf, vol. 71, no. 12A, pp. 160–167, May 2024.
- R. Mukherjee, A. De, P. K. Saha, S. D. Mukherjee, A. Dhar, and S. Adhikari, **“Power System Transient Stability Analysis using Decision Tree Classifier- A Case Study on the IEEE 57- Bus System”**, jmmf, vol. 71, no. 12A, pp. 30–39, May 2024.

• International Book Chapter Publications

- R. Mukherjee and A. De, **“Transient Stability based Security State Classification of Power System Networks using Kohonen’s Neural Network”**, Innovations in Electrical and Electronic Engineering. Lecture Notes in Electrical Engineering, vol. 661. Pp. 49 - 69 Springer, Singapore 2021.

• Conference Publications

- Angon Bhattacharjee, Rituparna Mukherjee, Abhinandan De, and Pallav Datta **“A Neuro-Fuzzy Control Technique for Control of Tank Level in a Lubricant Processing Plant”** in National Conference in Modern Trends in Electrical Engineering (NCMTEE–2009) organized jointly by the Department of Electrical Engineering of Hooghly Engineering and Technology College and The Institution of Engineering and Technology (UK) Kolkata Network.
- Rituparna Mukherjee, and Rikta Mazumder **“Switching Transient Analysis of 33/11 kV Baruipur Substation”** in National Conference in Modern Trends in Electrical Engineering (NCERT2013) which was organized jointly by the Department of Electrical Engineering of Heritage Institute of Technology and The Institution of Engineering and Technology (UK) Kolkata Network.

- Arka Panda, Rituparna Mukherjee, Abhinandan De and Samrat Chakraborty “Model Predictive Control for Power System Dynamic Security Enhancement” In 19th IEEE Conference on Power System (NPSC-2016) IIT Bhubaneswar, India.
- Rituparna Mukherjee, Abhinandan De, Promit Kumar Saha, Susmita Dhar Mukherjee, Abhishek Dhar, and Saurabh Adhikari, “A Convolutional Neural Network based Pattern Classification Approach for Dynamic Security Assessment with inadequate energy sources”, International Conference on Engineering Design and Computing (ICEDC)- Jan 2023.
- Rituparna Mukherjee, Abhinandan De, Promit Kumar Saha, Susmita Dhar Mukherjee, Abhishek Dhar, and Saurabh Adhikari, “Power System Transient Stability Analysis using Decision Tree Classifier- a Case Study on the IEEE 57-Bus System”, International Conference on Engineering Design and Computing (ICEDC)- Jan 2023.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Avik Dutta and Rituparna Mitra, “Ensemble Security Predictor based Power System Dynamic Security State Predictor”, International Conference on Integrative Science and Technology (ICISE)- Sept 2023.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, and Titas Kumar Nag, “Power System Transient Stability Analysis using Kohonen Neural Network Security Classifier – a Case Study on the IEEE 57-Bus System”, International Conference on Integrative Science and Technology (ICISE)- Sept 2023.
- Sudip Das, Abhishek Dhar, Pritam Kumar Gayen, Deb Sekhar Roy, Debajyoti Sengupta, “Development of Environment Friendly Solar Powered Friendship Cap for Visually Dysfunctional Persons using IoT”, International Conference on Future Trends and Technological Advancement in Engineering (ICFTTAE), 2020.
- Rituparna Mukherjee, Abhishek Dhar, Susmita Dhar Mukherjee, Suvraujjal Dutta and Promit Kumar Saha, “Machine Learning Applications in Power System Resilience: A Review”, International Conference on Integrative Science and Technology (ICISE)- Sept 2023.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Avik Dutta and Rituparna Mitra, “A Complete Review of Numerous Methods of Voltage Stability Analysis”, International Conference on Integrative Science and Technology (ICISE)- Sept 2023.
- Rituparna Mukherjee, Abhishek Dhar, Susmita Dhar Mukherjee, Suvraujjal Dutta and Promit Kumar Saha, “Applicability of Random Forest Model for Predicting Groundwater Table in Birbhum District, West Bengal India - 77”, International International Conference on Integrative Science and Technology (ICISE)- Sept 2023.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Avik Dutta and Rituparna Mitra “Machine Learning Techniques for Power System Protection from a Utility Perspective”, International Conference on Engineering Design and Computing (ICEDC)- Feb 2024
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Avik Dutta and Rituparna Mitra “Review of machine learning applications to power systems studies”, International Conference on Engineering Design and Computing (ICEDC)- Feb 2024.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Titas Kumar Nag and Suvraujjal Dutta, “Power System Relay Protection Technology: Its Development and Use”, International Conference on Engineering Design and Computing (ICEDC)- Feb 2024.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Titas Kumar Nag and Suvraujjal Dutta, “Optimization Techniques in Power System: Review”, International Conference on Engineering Design and Computing (ICEDC)- Feb 2024.
- Rituparna Mukherjee, Abhishek Dhar, Promit Kumar Saha, Susmita Dhar Mukherjee, Titas Kumar Nag and Suvraujjal Dutta, “A Useful Method for Machine Learning in Power System Protection”, International Conference on Engineering Design and Computing (ICEDC)- Feb 2024.

- ❖ **Currently acting as PhD Guide to one scholar.**
- ❖ Conducting Lectures and Tutorials as per University Syllabus for Power Systems, Control Systems, Circuit Theory and Basic Electrical Engineering for Undergraduate students.
- ❖ Conducting Lectures and Tutorials as per University Syllabus for Power Systems & Control Systems for Postgraduate students.
- ❖ Co-ordination and collaboration for NBA and AICTE visits.
- ❖ Conducting In-depth Laboratory sessions to aid in concept development.
- ❖ Conducting and facilitating Industrial Training and Final Year Projects for Students and properly guiding them.
- ❖ Maintain and organize the Control System Laboratory, Circuit Theory Laboratory & Basic Electrical Engineering Laboratory as per AICTE norms.
- ❖ Conducting Placement Grooming Sessions for Third and Final Year students.
- ❖ Attending workshops and seminars for Technical Upgrading of Teaching Systems.
- ❖ Participating in management meetings for updating instruction processes.

Sept'17 – Aug'22 with Techno India College (MAKAUT), Kolkata as Assistant Professor (Department of Electrical Engineering)- Part Time

- ❖ Conducting Lectures and Tutorials as per University Syllabus for Power Systems, Control Systems, Circuit Theory and Basic Electrical Engineering for Undergraduate students.
- ❖ Conducting Lectures and Tutorials as per University Syllabus for Power Systems, Renewable Energy & Control Systems for Postgraduate students.
- ❖ Co-ordination and collaboration for NBA and AICTE visits.
- ❖ Conducting In-depth Laboratory sessions to aid in concept development.

Aug'16 – Aug'17 with Tractebel Engineering India Ltd as Design Engineer

- ❖ Global Engineering & Procurement Services: Managing a team of 5 members to deliver engineering and procurement services across various regions. Detailed Engineering for cabling, layout and earthing.
- ❖ Quality & Feasibility Monitoring: Overseeing quality of delivery, conducting feasibility studies, and performing construction monitoring for financial institutions.

July'12 – Jul'16 with Guru Nanak Institute of Technology (MAKAUT), Kolkata as Assistant Professor (Department of Electrical Engineering)

- ❖ Conducting Lectures and Tutorials as per University Syllabus for Power Systems, Control Systems, Circuit Theory and Basic Electrical Engineering for Undergraduate students.
- ❖ Co-ordination and collaboration for NBA and AICTE visits.
- ❖ Conducting In-depth Laboratory sessions to aid in concept development.
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- ❖ Maintain and organize the Control System Laboratory, Circuit Theory Laboratory & Basic Electrical Engineering Laboratory as per AICTE norms.
- ❖ Conducting Placement Grooming Sessions for Third and Final Year students.
- ❖ Attending workshops and seminars for Technical Upgrading of Teaching Systems.
- ❖ Participating in management meetings for updating instruction processes.

Aug'09 – Jun'10 with K.P. Buildcon Pvt. Ltd. Kolkata as PMC Co-Ordinator

- ❖ Preparation of Daily Progress Reports.
- ❖ Coordinate with the vendors and the client in order to deliver the best quality work to the client.
- ❖ Coordinate along with the vendors and the client in order to deliver the best quality work to the client.
- ❖ Preparation of BOQ for BTS Towers.



PERSONAL DETAILS

Date of Birth: 7th Nov 1986
Marital Status: Married
Nationality: Indian
Languages Known: English, Hindi & Bengali