Dr. Kapil Chauhan, Member, IEEE
Assistant Professor, Department of Electrical Engineering, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, UP-241001, India
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Employment

- Assistant Professor, **Motilal Nehru National Institute of Technology Allahabad**, August 2023 onwards;
- Postdoctoral Research Fellow, **Nanyang Technological University Singapore,** June 2022- May 2023;
- Institute Postdoctoral Fellow, **Indian Institute of Technology Bombay,** Jan- June, 2022;

Education

- Ph.D, Electrical Engineering, Indian Institute of Technology Ropar, Punjab, 2021;
- M.Tech, Power Systems, National Institute of Technology Hamirpur, HP, 2016;
- B.Tech, Electrical & Electronics Engineering, Dr APJ Abdul Kalam Technical University, UP, 2014;

Publications

Journals

1. S. Ly, **K. Chauhan***, et. al.,"A Novel Framework for Operational Infeasibility Assessment of Active Distribution Systems Using Improved Quantile Polynomial Chaos Expansion", **Elsevier- Sustainable Energy, Grids and Networks, Oct 2025**, doi: https://doi.org/10.1016/j.segan.2025.102006. * Corresponding author
2. **K. Chauhan**, J. Moirangthem, S. Ly, L. Koh and H. Nguyen, "Stochastic Day-Ahead Scheduling of Distributed Energy Resources: A Meta Modelling Approach," in **IEEE Journal of Emerging and Selected Topics in Industrial Electronics, Oct 2023**, doi: 10.1109/JESTIE.2023.3332573.
3. V. Veerasamy, H. Qiu, A. Ghias, **K. Chauhan**, H. D. Nguyen and H. B. Gooi, "Federated-Learning-Based Distributed Frequency Control Against False Data Injection Attack," in **IEEE Transactions on Industrial Electronics, Nov 2023**, doi: 10.1109/TIE.2023.3325582.
4. **K. Chauhan** and R. Sodhi, "A signal Parameter Measurement Technique for Adversely Distorted Multi-Frequency Grid Signals," **Springer, 2021** 102, 927–938.
5. **K. Chauhan** and R. Sodhi, "A distribution-level PMU enabled Teager-Kaiser energy based islanding detector" , **Elsevier- Electric Power Systems Research, March 2021**, Volume 192,2021,106964, ISSN 0378-7796.

6. **K. Chauhan** and R. Sodhi, "Placement of Distribution-Level Phasor Measurements for Topological Observability and Monitoring of Active Distribution Networks," in **IEEE Transactions on Instrumentation and Measurement, June 2020,** vol. 69, no. 6, pp. 3451-3460, doi: 10.1109/TIM. 2019. 2939951.

7. **K. Chauhan**, M. V. Reddy and R. Sodhi, "A Novel Distribution-Level Phasor Estimation Algorithm Using Empirical Wavelet Transform," in **IEEE Transactions on Industrial Electronics, Oct. 2018**, vol. 65, no. 10, pp. 7984-7995, doi: 10.1109/TIE.2018.2801837.

Conference

1. P. Yadav, M. Arif, **K. Chauhan**, et. al, "A False Data Injection Attack–Resilient State Estimation Framework", 6th IEEE International Conference on Sustainable Energy and Future Electric Transportation, (SEFET 2026) VNIT Nagpur, India. (paper accepted)

2. M. Arif, P. Yadav, **K. Chauhan**, "A Novel Distribution System State Estimation Framework for Non-Gaussian Measurement Noise", 4^{th} IEEE Industrial Electronics Society Annual On-Line Conference (ONCON-2025), IIT Kharagpur, India, (in Top 3 papers of the conference)

3. L. Sel, **K. Chauhan**, A. Singh, and H D Ngyuen, "Meta-model Neural Process for Probabilistic Power Flow under Varying N-1 System Topologies," 2025 IEEE Power & Energy Society General Meeting (PESGM), USA.

4. **K. Chauhan**, et.al, "A Novel Islanding Detection Technique using Synchrophasor Data Sharing", 5th IEEE International Conference on Sustainable Energy and Future Electric Transportation, MNIT Jaipur, India.

5. Y. Bansal, **K. Chauhan**, R. Sodhi, S. Chakrabarti and A. Sharma, "A Modified Load Flow Method for Enhancing Resiliency of Islanded Active Distribution Networks," 2024 IEEE Power & Energy Society General Meeting (PESGM), Seattle, WA, USA, 2024, pp. 1-5, doi: 10.1109/PESGM 51994.2024.10760278.

6. M. S. Zaidi, S. S. Negi, **K. Chauhan** and A. K. Singh, "Advancements in Wide-Area Monitoring System for Emerging Distribution Grids," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-7, doi: 10.1109/SEFET61574.2024.10718062.

7. L. Sel, **K. Chauhan**, G.H. Beng, and H.D. Nguyen, "A Novel Quantile Lite-PCE for Probabilistic Risk Assessment of Power System Cascading Outage for N-1-1 Contingency Analysis", IEEE PES General Meeting-2023.

8. **K. Chauhan**, M Pandit, R Sodhi, H.D. Nguyen, "Synchrophasor Measurement Assisted Control Framework for Voltage Rise Mitigation in Active Distribution Networks, IEEE 10th Power India International Conference 2022, NIT Delhi, India.

9. K.K. Gajjar, **K. Chauhan**, A.M. Kulkarni, "Controller-Hardware-in-the-Loop simulation setup using a Real-Time Hybrid Simulator for Testing of Wide-area Damping Controllers", 2022 22st National Power Systems Conference (NPSC), IIT Delhi, India.

10. **K. Chauhan** and R. Sodhi, "A novel Centralized Islanding Scheme using Teager-Kaiser Energy of Distribution-level Synchrophasors", IEEE Energy Conversion Congress & Exposition (ECCE) 2021, Singapore.

11. **K. Chauhan** and R. Sodhi, "Advancements in Microgrid Voltage Control Schemes," 2020 21st National Power Systems Conference (NPSC), IIT Gandhinagar, India.

12. **K. Chauhan** and R. Sodhi, "A Robust State Estimation Framework for Active Distribution Network with Distribution-Level PMUs," 2020 IEEE Power & Energy Society General Meeting (PESGM), Montreal, Canada.
13. **K. Chauhan** and R. Sodhi, "A Comparative Analysis of PMU Placement for Active Distribution Network's Observability," 2019 8th International Conference on Power Systems (ICPS), MNIT Jaipur, India.
14. **K. Chauhan** and R. Sodhi, "Distribution-Level Synchrophasors Estimation," 2018 20th National Power Systems Conference (NPSC), NIT Tiruchirappalli, India.
15. **K. Chauhan** MV Reddy and R. Sodhi, "A Novel Frequency Estimator for Adversely Distorted Grid Signals," 2018 International Symposium on Industrial Electronics (INDEL), Banja Luka, Bosnia and Herzegovina.

Projects

1. Advanced Monitoring and Management Strategies for Renewable-Rich Power System, Seed Grant by MNNIT Allahabad, Jan 2024-Dec 2025. (Completed)

Course Taught

1. PG: Optimization Technique, Power System Planning
2. UG: Modern Power Station Practices, Digital Signal Processing, Network Analysis,

Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant

1. **Best Paper Award (Top 3)** at the 4th IEEE Industrial Electronics Society Annual Online Conference (**IEEE ONCON 2025**), organized by IIT Kharagpur.
2. **AWSAR DST Award- 2022** for Augmenting Writing Skills for Articulating Research (AWSAR) by Department of Science and Technology (DST), **Government of India**. (PostDoc Category)
3. **POSOCO Power System Award- 2021** for the PhD thesis by Grid Controller of India, **Government of India**.
4. **AWSAR DST Award- 2020** for Augmenting Writing Skills for Articulating Research (AWSAR) by Department of Science and Technology (DST), **Government of India**. (PhD Category)
5. **MHRD Fellowship- 2014 & 2016** for M.Tech and PhD studies.
6. **Samman Prateek *(Symbol of Honor)*-2016** on golden jubilee of high school.
7. **Academic Excellence Award- 2011** for the excellent performance in the institute during B.Tech.
8. **Prithivi Mitr *(friend of earth)* Award- 2008** by Earth Matters Foundation New Delhi.

Professional and Outreach Activities

1. **Student Activity and Award Committee Chair** in IEEE 6th International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFeT 2026), VNIT Nagpur, India, 08 July - 11 July, 2026
2. **Special Session Chair** on "Power System Monitroing, Protection and Control" in IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFeT 2025), MNIT Jaipur, India, 09 July - 12 July, 2025
3. **Student Activity and Award Committee Chair** in IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFeT 2025), MNIT Jaipur, India, 09 July - 12 July, 2025
4. **Coordinator**, Research Oriented Technical Writing (ROTW-2025), Department of EE, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, June 30-July 4, 2025.
5. **Convener**, 4th One Week Self Financed Short-Term Course on "Advances in Power Technologies (APT-2025)", Department of EE, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, June 23-27, 2025.
6. **Special Session Chair** on "Advanced Measurement and Instrumentation for Industrial Power Systems and Power Electronics Application" in IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFeT 2024) held Hyderabad, India, July 2024.
7. **Organizing Secretary**, 8th IEEE 2024 IEEE Students Conference on Engineering and System, MNNIT Allahabad, Prayagraj, India.
8. **Convener**, Disciplinary Committee, 20th Convocation, MNNIT Allahabad, Prayagraj, August 18, 2023.

Invited Talks, Lectures and Tutorials

1. Expert talk on "Wide Area Monitoring Systems for Smart Grid", 4th One Week Self Financed Short-Term Course on "Advances in Power Technologies (APT-2025)", Motilal Nehru National Institute of Technology Allahabad, Prayagraj, June 23-27, 2025.
2. Tutorial on "Scaling the Grid: Design, Development, and Application of Wide Area Monitoring System (WAMS) for Power Grid", 2024 IEEE 11th Power India International Conference (PIICON-2024), at Malaviya National Institute of Technology Jaipur, Dec 10-12, 2024.
3. Expert talk on "Microgrids: Enabling Localized Sustainable Energy Solutions" in Faculty Development Programme of Invertis University Bareilley, July 20, 2023.
4. Expert talk on "Integrated Power System for Research Prospective", at Vellore Institute of Technology Andhra Pradesh, Dec 22, 2022.

Administrative Services

@ Motilal Nehru National Institute of Technology Allahabad, Prayagraj

1. Faculty-in-charge (FI), Electricity Maintenance, Residential Campus, October 2025 onward.

2. Office-charge (OC), Exam, Department of Electrical Engineering, August 2023 onward.

3. Office-charge (OC), Time-Table, Department of Electrical Engineering, August 2023 onward.

4. Faculty-in-charge (FI), B.Tech Project, Department of Electrical Engineering, AY 2023-24.