

DR. MAANVI BHATNAGAR

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- **PhD from NIT-Raipur in Electrical Engineering and Artificial Intelligence Specialization**
- Proficient skill in **Medical health data analytics, Forecasting, Artificial Intelligence, Machine/ Deep Learning, POWER BI, TABLEAU, Python, MATLAB/Simulink, SQL, MS Excel, Google Colab and Jupyter Notebook.**
- Interpersonal skills -Research and Literature Review, Project Acquisition, Receptive feedback, Project Acquisition, Collaborative worker team worker, and good presentation skills.

WORK EXPERIENCE

Data Scientist: NDS infoserv

Mumbai, Maharashtra, India

March 2024- Present

- Developing Generative AI model for automating medical coding systems.
- Conducted market research and Literature Reviews: Performed research to identify potential clients and market trends, supporting business development efforts.
- Client Engagement and Project Acquisition: Engaged with clients, presented insights, and helped secure new projects by aligning solutions with client needs

Technical Content Development Intern: Super AI

Noida, Uttar Pradesh, India

June 2023 – January 2024

- Developed technical content in data science and artificial intelligence such as the basics of machine learning algorithms and Python concepts.
- Developed Dashboards using the Super AI tool for generating insights focusing on the art of data storytelling.
- Developed Courses for learning the Super AI tool.

Junior Research Fellow: BIT Mesra

Ranchi, Jharkhand, India

Sept 2018-Sept2019

- Worked on DST funded project on “Severity estimation of Malaria using foldscope and machine learning.”
- Developed classification and detection model for malaria detection in human blood samples.
- Worked on image segmentation of infected cells.

TECHNICAL SKILLS

- Artificial Intelligence Techniques applications in Medical Health Data Analytics
- Forecasting and Predictive Analytics
- Programming Language: Python (NumPy, Pandas, Scikit-learn, Keras)
- Machine Learning, Linear Regression-NN, Bagging/Boosting algorithms, Clustering algorithms
- Deep Learning-ANN, LSTM, CNN, AM, GRU, Autoencoder
- Pattern Recognition
- Data Visualization: POWER BI, Excel
- Statistical analysis
- Technical research analysis and writing

EDUCATION

1) Ph.D. from Electrical Engineering Dept., NIT-Raipur

(2019–2024)

Thesis Title: “Artificial Intelligence-based Protection Schemes for Power Transmission and Distribution System with Penetration of Renewable Energy Sources”

This thesis surveys **fault detection techniques** identifies gaps, and proposes novel methods **using deep learning, fuzzy logic, XGBoost, LightGBM, Autoencoders, CNN, and LSTM** for transmission and distribution systems. Evaluation includes reliability analysis and real-time assessment of the Chhattisgarh State Power Transmission System, validated through **MATLAB/Simulink** simulations.

2) M.E. in Control Systems from Electrical Engineering Dept., BIT Mesra

(2016–2018)

Thesis Title: “Identification of Best Features for Three Class EEG-based Motor Imagery Data and their Classification.”

This thesis focuses on **Brain-Computer Interface (BCI)** applications of **EEG signals**. It compares various feature extraction techniques and **machine learning algorithms (SVM, PSO-SVM, LDA, k-NN)** for motor imagery signals **classification** for BCI systems.

3) B.Tech in Electrical & Electronics Engineering, Dr. APJ Abdul Kalam Technical University

(2011–2015)

PROFESSIONAL CERTIFICATIONS

- Fast Track Python Bootcamp for DSA and Data Libraries (Grow Data Skills) Sept 2023
- Applied Data Analytics a Practical Approach (NIT, Raipur) June 2023
- Python Data Analytics Professional (Python Academy, Raipur) Feb 2023

RESEARCH PUBLICATIONS

JOURNALS

1. **Bhatnagar, Maanvi**, Anamika Yadav, Aleena Swetapadma, and Almoataz Y. Abdelaziz. "LSTM-based low-impedance fault and high-impedance fault detection and classification." *Electrical Engineering* (2024): 1-25.
2. **Bhatnagar, Maanvi**, Anamik Yadav, and Aleena Swetapadma. "Integrating Distributed Generation and Advanced Deep Learning for Efficient Distribution System Management and Fault Detection." *Arabian Journal for Science and Engineering* (2023).
3. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "Enhancing the resiliency of transmission lines using extreme gradient boosting against faults." *Electric Power Systems Research* 207 (2022): 107850.
4. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "A resilient protection scheme for common shunt fault and high impedance fault in distribution lines using wavelet transform." *IEEE Systems Journal* 16, no. 4 (2022): 5281-5292.
5. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "Fuzzy based relaying scheme for high impedance faults in DG integrated distribution system." *Electric Power Systems Research* 202 (2022): 107602.
6. Yadav, Anamika, Ayush Mishra, and **Maanvi Bhatnagar**. "Detection of partial loss of excitation faults in generator in the presence of UPFC." *Journal of The Institution of Engineers (India): Series B* 102 (2021): 213-226.
7. Gupta, Gauri Shanker, **Maanvi Bhatnagar**, Shikhar Kumar, and Rakesh Kumar Sinha. "A comparative study of application of different non-conventional filters on electroencephalogram." *Biomed. Res* 31 (2020): 1-9.
8. Gupta, Gauri Shanker, **Maanvi Bhatnagar**, Subhojit Ghosh, and Rakesh Kumar Sinha. "Design of control system for motor imagery-based neuro-aid application." *Biomedical Engineering: Applications, Basis and Communications* 31, no. 04 (2019): 1950031.

BOOK CHAPTERS

1. Gupta, Gauri Shanker, **Maanvi Bhatnagar**, Dusmanta Kuamar Mohanta, and Rakesh Kumar Sinha. "Prototype algorithm for three-class motor imagery data classification: A step toward development of human-computer interaction-based neuro-aid." In *Smart Biosensors in Medical Care*, pp. 1-28. Academic Press, 2020.

CONFERENCE

1. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "High Impedance Fault Detection in Distribution Networks using Unsupervised Learning Technique." In *2023 2nd International Conference for Innovation in Technology (INOCON)*, pp. 1-6. IEEE, 2023.
2. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "Random Forest Regression-Based Fault Location Scheme for Transmission Lines." In *Smart Technologies for Power and Green Energy: Proceedings of STPGE 2022*, pp. 201-210. Singapore: Springer Nature Singapore, 2022.
3. **Bhatnagar, Maanvi**, Anamika Yadav, and Aleena Swetapadma. "A Fault Detection and Faulty Section Identification Scheme for Micro-Grids." In *2022 Second International Conference on Power, Control and Computing Technologies (ICPC2T)*, pp. 1-6. IEEE, 2022.
4. **Bhatnagar, Maanvi**, and Anamika Yadav. "Fault detection and classification in transmission line using fuzzy inference system." In *2020 5th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE)*, pp. 1-6. IEEE, 2020.
5. **Bhatnagar, Maanvi**, Gauri Shanker Gupta, and Rakesh Kumar Sinha. "k-NN and LDA based Motor Imagery EEG Classification using Phase Features." In *2018 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, pp. 1-6. IEEE, 2018.
6. **Bhatnagar, Maanvi**, Gauri Shanker Gupta, and Rakesh Kumar Sinha. "Linear discriminant analysis classifies the EEG spectral features obtained from three class motor imagination." In *2018 2nd International Conference on Power, Energy and Environment: Towards Smart Technology (ICEPE)*, pp. 1-6. IEEE, 2018.

PERSONAL DETAILS/ ACHIEVEMENTS

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- **Ph.D. Scholarship**, Issued by Ministry of Human Resource Development (**MHRD**), India, 2019
 - **B.Tech Silver Medallist**
 - Received **Scholarship** in SSC for **academic performance**.
 - Linguistic Proficiency – English, Hindi.
 - Hobbies – Reading and Yoga.

DECLARATION

I hereby declare that the information furnished above is complete and true to my knowledge.

Date:

Place: