

Dr. ANIKET VATSA

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Research Gate: <https://www.researchgate.net/profile/Aniket-Vatsa>

Google Scholar: https://scholar.google.com/citations?user=8_I6XcAAAAJ&hl=en

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CAREER OBJECTIVE

To utilize my expertise in data science and machine learning to tackle complex problems, drive innovative solutions, and significantly contribute to achieving organizational objectives and growth while advancing my professional growth.

INTERPERSONAL SKILLS

Research, Literature Review, Receptive to Feedback, Collaboration, Project Acquisition, Client Management, Leadership, Teamwork.

RESEARCH AREAS

Artificial Intelligence, Deep Learning, Data Science, Algorithm Development, AI-Enabled Signal Processing, Large Language Models, Deep Learning-Driven Transformer Prognostic Health Management, AI-based Signal Processing, DFDS, Insulation health assessment, Dielectrics, Deep Learning Application in High-Voltage, Power Systems, and Other Complex Dynamic Systems.

PERMANENT ADDRESS

Sen Raliegh road, Lower kumarpur, Asansol-713304, West Bengal, India.

EDUCATION

Ph.D. in Electrical Engineering

August 2018- July 2024

Indian Institute of Technology (Indian School of Mines) IIT (ISM), Dhanbad, Jharkhand, India

Specialization: Electrical Engineering

Research Area: Transformer Prognostics Health Management (TPHM), AI-based Signal Processing, DFDS, Deep-learning, Insulation health assessment, Dielectrics, Power system.

Thesis: "*Deep learning-based dielectric response analysis for condition monitoring of transformers.*"

Guide: Dr. Ananda Shankar Hati, Assistant Professor

CGPA: 9.21/10 (First Class)

Master of Technology in Electrical Engineering

July 2015-July, 2017

Indian Institute of Technology (Indian School of Mines) IIT (ISM), Dhanbad, Jharkhand, India

Specialization: Electrical Engineering

Research Area: Condition monitoring of induction motor, Wavelets, and FFT.

Thesis: "*Design and Development of Current Monitoring Instrumentation System for Rotor Fault Detection of Induction Motor*"

Guide: Dr. T.K Chatterjee, Professor

CGPA: 8.49/10 (First Class)

Bachelor of Technology in Electrical Engineering

July 2010-July, 2014

WBUT, West Bengal, India

Specialization: Electrical Engineering

Thesis: "*Design of a Pc-Based Flow Indicating Controller Using Hall Probe Sensor*"

Guide: Dr. Rajan Sarkar, Associate Professor

CGPA: 7.91/10 (First Class)

AISSCE 12th Board Exam

March 2009

RSVM, Dhanbad.

Specialization: Science (Physics, Chemistry & Maths)

PERCENTAGE: 78.40 % (First Class)

AISSE 10th Board Exam

March 2007

Imperial School of Learning, Dhanbad.

PERCENTAGE: 84.00 % (First Class)

PUBLICATIONS

International Journals

- [1]. Vatsa, Aniket, and Ananda Shankar Hati. "Depolarization current prediction of transformers OPI system affected from detrapped charge using LSTM." IEEE Transactions on Instrumentation and Measurement, 71 (2022): 1-11. DOI: <https://doi.org/10.1109/TIM.2022.3181286>. (SCIE Q1, IF-5.6)
- [2]. Vatsa, Aniket, Ananda Shankar Hati, and Vinod Khadkikar. "Enhanced Visual Identification of Dimensionally Expanded FDS for Transformers Insulation Aging State Assessment". IEEE Transactions on Industry Applications (2024). (Early Access) (SCIE Q1, IF-4.2)
- [3]. Vatsa, Aniket, and Ananda Shankar Hati. "Enhanced Transformers Insulation Assessment of Noise-Affected Time-Domain Spectroscopy Using Hybrid EMD-en-de-LSTM (2024). (In publication) (SCIE Q1, IF-5.6)
- [4]. Vatsa, Aniket, Ananda Shankar Hati, and Akshay Kumar Rathore. "Enhancing Transformer Health Monitoring with AI-Driven Prognostic Diagnosis Trends." IEEE Industrial Electronics Magazine, 18 (2023): 33-44. DOI: <https://doi.org/10.1109/MIE.2023.3329277>. (SCIE Q1, IF-6.3)
- [5]. Vatsa, Aniket, and Ananda Shankar Hati. "Insulation aging condition assessment of transformer in the visual domain based on SE-CNN." Engineering Applications of Artificial Intelligence 128. (2024): 107409. DOI: <https://doi.org/10.1016/j.engappai.2023.107409>. (SCIE Q1, IF-8)
- [6]. Vatsa, Aniket, Ananda Shankar Hati, Vadim Bolshev, Alexander Vinogradov, Vladimir Panchenko, and Prasun Chakrabarti. "Deep Learning-Based Transformer Moisture Diagnostics Using Long Short-Term Memory Networks." Energies 16.5 (2023): 2382. DOI: <https://doi.org/10.3390/en16052382>. (SCIE Q3, IF-3.2)
- [7]. Vatsa, Aniket, Ananda Shankar Hati, Prashant Kumar, Martin Margala, and Prasun Chakrabarti. "Residual LSTM-based short-duration forecasting of polarization current for effective assessment of transformers insulation". Sci Rep 14, 1369 (2024). DOI: <https://doi.org/10.1038/s41598-023-50641-z>. (SCIE Q2, IF-4.6)

International Conferences

- [1]. Vatsa, Aniket, Ananda Shankar Hati, and Vinod Khadkikar. "Ageing Condition Assessment of Transformer Insulation in Visual Domain Using DCNN." 2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES). IEEE, 2022. DOI: <https://doi.org/10.1109/PEDES56012.2022.10080633>.
- [2]. Vatsa, Aniket, and Ananda Shankar Hati. "Transformer Faults Detection using Inrush Transients based on Multi-class SVM." 2022 IEEE 6th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON). IEEE, 2022. DOI: <https://doi.org/10.1109/CATCON56237.2022.10077668>.
- [3]. Sharma, Mayank, Tanmoy Maity, Aniket Vatsa, and Soumyadip Banerjee. "Intelligent Explosivity Prediction of Underground Coal Mines using a Deep Parametrised Residual RNN." 2022 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON). IEEE, 2022. DOI: <https://doi.org/10.1109/SMARTGENCON56628.2022.10083556>.
- [4]. Vatsa, Aniket, Ananda Shankar Hati, and Mayank Sharma. "Efficient Residual LSTM-based Short Duration Polarization Current Forecasting Technique of Transformer," 2023 International Conference on Energy, Materials and Communication Engineering (ICEMCE), Madurai, India, IEEE, 2022. DOI: <https://doi.org/10.1109/ICEMCE57940.2023.10434272>

PROFESSIONAL AFFILIATIONS & MEMBERSHIP

Member IEEE	Member of the Institute of Electrical & Electronics Engineers: 98000077
Society Membership	Internet of Things Community, IEEE Big Data Community IEEE Instrumentation and Measurement Society, IEEE Sensors Council, IEEE Council on RFID

TECHNICAL SKILLS

- Machine Learning & AI: Expertise in predictive modeling and machine learning algorithms, including Linear Regression, Neural Networks (NN), Bagging/Boosting algorithms, Clustering, and advanced deep learning architectures such as LSTM, CNN, GRU, and Autoencoders.
 - Programming Languages: Proficient in Python, with extensive experience using libraries and frameworks such as NumPy, Pandas, Scikit-learn, Keras, TensorFlow, PyTorch, and Django. Skilled in SQL for database management.
 - Data Analysis & Visualization: Advanced skills in data manipulation and analysis using NumPy and Pandas. Experienced with data visualization tools like Power BI and Excel for effective representation and interpretation of complex data.
 - Technical Tools: Experienced in data science environments, including Anaconda, Spyder, and Jupyter, and utilizing large language models (LLMs) for advanced analytics and natural language processing.
 - Knowledge of simulation platforms such as MATLAB, PSPICE, PSIM, ANSYS, and MAXWELL. Experience in hardware such as PLC, Proteus, ATmega328P microcontroller, RP2040, OPAL-RT and IoT platforms.
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WORK EXPERIENCE

Data Scientist: Movate**Jun 2025 – Present**

- QA automation and enhancement using agents
- Defects data and impact based regression agents

Data Scientist: NDS Infoserv**March 2024 – May 2024**

- Developing predictive analytics models for transformer health monitoring and medical health data analysis.
- Utilizing machine learning algorithms and large language models (LLM) to extract insights and optimize processes.
- Key projects include transformer predictive analytics and medical health data analytics.

Research Fellow: Indian Institute of Technology (Indian School of Mines), Dhanbad**July 2018 - March 2024**

- Conducted research on AI-enabled signal processing and dielectric modeling for transformer condition monitoring.
- Developed models for fault detection, current prediction, and insulation aging assessment using advanced machine learning techniques.
- Published research papers in reputed international journals and conferences.

Assistant Professor: Bengal College of Engineering**April 2017 - June 2018**

- Taught undergraduate courses in Electrical and Electronics Engineering.
- Guided student projects and research in electrical engineering topics.
- Organized seminars and workshops to enhance student learning and engagement.

Electrical Instructor: Industrial Training Centre (KK)**September 2014 - February 2015**

- Trained students in practical aspects of electrical engineering.
 - Developed curriculum and training modules for electrical engineering courses.
 - Provided hands-on experience with electrical tools and equipment to prepare students for industrial roles
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PROFESSIONAL CERTIFICATIONS

- Online Training on Internet of Things (IoT), MSME-Technology Development Centre (PPDC) Agra. (30/04/2020)
 - Artificial intelligence and Data Analytics with Python, MSME-Technology Development Centre (PPDC) Agra. (15/05/2020)
 - Neural Networks and Deep Learning, Coursera. Credential ID: GS65RZ44UH7L. (26/09/2022)
 - Structuring Machine Learning Projects, Coursera. Credential ID: 5BGQD2W7VDZT. (22/10/2022)
 - Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, Coursera. Credential ID: LKMAY98S227A. (06/08/2023)
 - Sequence Models, Coursera. Credential ID: D575PNLXUZ82. (22/08/2023)
 - Developing AI Applications with Python and Flask, IBM Coursera. Credential ID: DWQFKKW2SP7E (31/07/2024)
 - Generative AI for Business, Datacamp. Credential ID: #36626128. (24/08/2024)
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PERSONAL DETAILS /ACHIEVEMENTS

- **Nationality:** Indian **Linguistic Proficiency:** English, Hindi, and Bengali. **Hobbies:** Playing musical instruments and Reading
- **Major Achievements.**
 - **Best Thesis Award:** Recognized for the best thesis at IIT(ISM) for the year 2024.
 - **Publications:** Authored papers in high-impact journals, including three publications in prestigious IEEE Transactions.
 - **Academic Excellence:** Achieved a stellar CGPA of 9.21/10 during Ph.D. studies.
 - **GATE Qualified:** Successfully cleared the Graduate Aptitude Test in Engineering (GATE).
 - **Consistent Academic Performance:** Maintained a first-class academic record throughout the educational journey.
 - **Scholarship:** Issued by Ministry of Human Resource Development (MHRD), India, 2018-2023.