

Ravi Prakash Srivastava

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Education

Indian Institute of Information Technology, Ranchi, India

August 2024 – April 2026

M.Tech (Data Science & AI)

North Eastern Hill University, India

August 2018 – June 2022

B.Tech (Information Technology) (CGPA: 7.85)

Publications [ORCID ID:0009-0009-3255-8758]

- **Balanced Few-Shot Episodic Learning for Accurate Retinal Disease Diagnosis**
(arXiv: <https://arxiv.org/abs/2512.04967v1>)
- **IoT-HITS: IoT-based Human Intrusion Detection System for Border Regions using Deep Learning**
[IETE Journal of Research] DOI: <https://doi.org/10.1080/03772063.2025.2521688>
- **Internet of Things (IoT) and Big Data for Industry 4.0**
[International Neurology Journal] DOI: <https://einq.net/index.php/INJ/article/view/277/224>
- **Smart City Vehicle Accident Monitoring and Detection System Using IoT**
[International Neurology Journal] DOI: <https://einq.net/index.php/INJ/article/view/275/220>
- **Smart City Vehicle Accident Monitoring and Detection System Using MEMS, GSM, GPS Raspberry Pi 4**
[IETE Journal of Research] DOI: <https://doi.org/10.1080/03772063.2022.2043787>

Experience

Research Data Scientist *Pantech e-learning, India*

February 2023 – August 2024

- Designed predictive machine learning models with emphasis on reliability and robustness under noisy and incomplete data.
- Conducted systematic robustness evaluation through stress testing, identifying failure modes and informing mitigation strategies.

Machine Learning Intern *Center for Development of Advanced Computing (C-DAC), India* August 2022 – February 2023

- Performed data preprocessing and feature engineering on student activity logs, including attendance, assignment submissions, and quiz scores, to improve model performance.
- Conducted comparative evaluation of multiple machine learning algorithms, including Decision Trees, Random Forests, and SVMs, to identify the most effective approach.
- Evaluated multiple algorithms and analyzed their generalization behavior on real-world educational data.

Projects

Master's Thesis (Ongoing) : A Transformer-Based Multilingual Framework for Text Summarization in Indian Languages:

- Investigated transformer-based approaches for multilingual text summarization in low-resource Indian languages, focusing on Hindi, Gujarati, and Bengali.
- Experimented with pretrained multilingual models, including mT5, mBART-50, and IndicBART, to build scalable and reliable summarization systems.
- Applied ensemble learning techniques to construct stronger baseline models, improving summarization quality, robustness, and cross-lingual generalization.

Bachelor's Thesis: IoT-HITS: IoT-based Human Intrusion Detection System for Border Regions Using Deep Learning:

- Developed an IoT-based border security system using deep learning for real-time human intrusion detection.
- Designed the system architecture, integrated sensors, and implemented the deep learning detection model with alert mechanisms.

Text Classification Using TF-IDF Feature Extraction in NLP:

- Developed a text classification model leveraging TF-IDF vectorization for feature extraction, achieving high accuracy in document categorization.
- Implemented preprocessing steps including tokenization, stopword removal, stemming/lemmatization, and text normalization to improve model performance.

Technical Skills

- **Core Research Areas:** Robustness and Distribution Shift, Multilingual NLP, Fairness and Bias Mitigation, Model Evaluation, Uncertainty Calibration, Adversarial Analysis.
- **Machine Learning & NLP:** Deep Learning, Transformer Models, Representation Learning, Text Summarization, Feature Engineering.
- **Tools & Frameworks:** PyTorch, Hugging Face Transformers, Scikit-learn, NumPy, Pandas.
- **Programming:** Python, C++, SQL, Bash.
- **Research Platforms:** Linux, Git, Jupyter Notebook.

Achievement

Received the Institution of Electronics and Telecommunication Engineers (IETE) Scholarship for academic excellence during M.Tech studies in Computer Science and Engineering.

Professional Affiliations

- The Institution of Electronics and Telecommunication Engineers (IETE) – Associate Member [AM-503427]

References

- **Dr. Kirti Kumari**
HoD and Assistant Professor, Department of CSE, Indian Institute of Information Technology, Ranchi, India
Email: kirti@iiitranchi.ac.in
- **Prof. Md. Iftekhar Hussain**
Professor of Information Technology, North-Eastern Hill University, India
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- **Dr. Khwairakpam Amitab**
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