



RAVI RANJAN



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PROFILE SUMMARY

Certified AI and ML professional with hands-on experience in deep learning, computer vision, and NLP. Proficient in developing and deploying end-to-end machine learning solutions using Python, TensorFlow, and PyTorch. Currently pursuing advanced certification in Generative AI and LLMs from IIT Kharagpur & TCS iON. Eager to contribute to real-world AI applications and continue growing in a dynamic, innovation-driven environment.

EDUCATION

Bachelor of Technology (CSE)

Govt. College of Engineering & Textile Technology, Berhampore

CGPA : 7.31/ 10

Maulana Abul Kalam Azad University of Technology (2015-2019)

PROJECTS :

Emotion Detection Using CNN (FER-2013 Dataset)

Tools: Python, TensorFlow, Keras, ResNet50v2, VGG16, OpenCV, Gradio

- Tackled class imbalance in the FER-2013 dataset using image augmentation and class weighting to enhance model robustness.
- Designed and iterated on custom CNN architectures (e.g., VGG16, ResNet50v2) to optimize classification performance.
- Achieved 66% overall accuracy in classifying seven emotions, with detailed evaluation using precision, recall, and F1-scores.
- Deployed the model for real-time emotion detection in live video streams using Gradio and OpenCV, dynamically displaying emotion labels on-screen.

Neural Machine Translation using GRU with Attention

Tools: Python, PyTorch, TorchText, Indic NLP, GRU, Colab

- Preprocessed 25,000+ sentence pairs from the IITB dataset by removing corrupted Hindi scripts, normalizing text, and tokenizing with TorchText and Indic NLP.
- Designed a GRU-based encoder-decoder architecture with attention to enhance source-target alignment during translation.
- Developed custom Dataset and DataLoader with padding, batching, and teacher forcing to optimize training. Tracked training with real-time loss plots and saved model checkpoints for evaluation and inference.

Machine Learning Projects

- Regression on Bangalore house prediction dataset and also converted the model to a fully functional Web application using the flask framework.
- WhatsApp Chat Analysis Project with Heroku Deployment.
- Clustering Project | Book Recommender System using KNN algorithm

SKILLS

- **Languages:** Python, SQL
- **Libraries:** PyTorch, TensorFlow, Scikit-learn, Keras, NumPy, Pandas
- **Tools:** Jupyter Notebook, Google Colab, Git
- **Deployment:** Flask, Gradio, Heroku
- **Visualization:** Matplotlib, Seaborn
- **Concepts:** Machine Learning, Deep Learning, Model Evaluation, Tuning

CERTIFICATE & ACHIEVEMENTS

- **Artificial Intelligence – Pro** (TCS iON National Proficiency Test)
- **Machine Learning – Pro** (TCS iON National Proficiency Test)
- **Hands-on approach to AI for real-world applications** Organized by IIT Kharagpur AI4ICPS I HUB Foundation and TCS iON (2023)
- **Coursera:**
 - a. Structuring Machine Learning Projects (2025)
 - b. Neural Networks and Deep Learning (2025)
 - c. Improving Deep Neural Networks (2025)

EXTRA-CURRICULARS

- Represented school at the 44th & 45th K.V.S. National Handball Championships
- Completed national-level adventure programs by NAF (Manali) and Bharat Scouts & Guides (Pachmarhi)