Arpit Kumar Nayak

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Professional Summary

Engineering student specializing in Machine Learning, Deep Learning, and Natural Language Processing with hands-on experience building AI-powered applications and production-level pipelines. Proficient in Python, TensorFlow, Scikit-Learn, and FastAPI. Experienced in data preprocessing, feature engineering, model training, evaluation, and deployment. Strong problem-solving skills with focus on real-world AI system development.

Technical Skills

- **Languages:** Python, C++, SQL
- **Machine Learning / Deep Learning:** TensorFlow, Keras, Scikit-Learn
- **Libraries:** NumPy, Pandas, NLTK, OpenCV
- **Frameworks / Tools:** FastAPI, LangChain, Hugging Face, Tesseract OCR
- **Core Concepts:** Machine Learning, Deep Learning, NLP, Large Language Models (LLMs), Data Preprocessing, Feature Engineering, Model Evaluation, Classification, Regression, REST API Development

Education

- **Silicon University** — Bhubaneswar, Odisha
  Bachelor of Technology in Electronics and Communication Engineering — *2022 – 2026*
- **Sai Higher Secondary School** — Baripada, Odisha
  Senior Secondary (Class XII) — *2020 – 2022*
- **St. Mary's Convent School** — Baripada, Odisha
  Matriculation (Class X) — *Pass-out: 2020*

Experience

- **Naada Tech**
  AI Engineer Intern — *Nov 2025 – Present*
  - Designed and implemented end-to-end AI pipelines for document processing involving OCR, translation, and structured extraction from image-based textual data.
  - Integrated Tesseract OCR and layout detection models to extract and organize text from scanned documents and complex newspaper layouts.
  - Developed multilingual translation workflows using Large Language Models (LLMs) for automated content transformation.
  - Built preprocessing pipelines including image enhancement, text normalization, and structured output generation for downstream applications.
  - Optimized model inference workflows for improved accuracy, scalability, and efficient batch processing.

Technical Projects

- **Smart Study API**
  - Developed an AI-powered quiz generation system using FastAPI for automated knowledge assessment.
  - Implemented adaptive learning algorithms where quiz difficulty dynamically adjusts based on user performance.
  - Integrated LangChain and Hugging Face models for intelligent question generation and difficulty scaling.
  - Designed RESTful API endpoints for quiz delivery, response evaluation, and performance tracking.
- **Next Word Prediction using GRU RNN**
  - Preprocessed text corpus using NLP techniques including tokenization, sequence generation, and vocabulary encoding.
  - Built and trained a GRU-based Recurrent Neural Network using TensorFlow/Keras for next-word prediction tasks.
  - Evaluated model performance and optimized training parameters for improved prediction accuracy.

- **IPL Match Winner Prediction**
  - Performed data cleaning, feature engineering, and preprocessing on historical IPL dataset.
  - Trained Logistic Regression classification model using Scikit-Learn achieving approximately 84% accuracy.
  - Improved generalization through hyperparameter tuning and performance evaluation.

Achievements & Activities

- Best Business Model Winner – Innovate Odisha 2.0 Hackathon (AI/ML Contribution)
- 2nd Runner-Up – Solo Instrumental Competition, IIT Kharagpur
- Mentored junior students in technical learning and project guidance
- Winner – Battle of Bands competitions across multiple institutions