KIRAN KUMAR SAHU

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Portfolio | LinkedIn | GitHub

SUMMARY

Results-driven Machine Learning Engineer with hands-on experience in developing and deploying AI-powered solutions across healthcare and government domains. Proficient in **Python, TensorFlow, PyTorch, and GPT-based models**, with a strong foundation in **data analysis, deep learning, and generative AI research (GANs)**. Experienced in building **production-grade web systems** using React, Spring Boot, and PostgreSQL — integrating machine learning models into scalable, user-centric applications. Passionate about leveraging AI for real-world problem-solving, model optimization, and end-to-end ML pipeline deployment.

EDUCATION

MCA - Artificial Intelligence & Machine Learning **2023 - 2025**
Chandigarh University, Mohali

BCA – Computer Application **2020 - 2023**
Rourkela Institute of Management Studies, Rourkela, Odisha
CGPA: 8.14

TECHNICAL SKILLS

- **Data Analysis & Visualization:** Excel (advanced), Power BI, Tableau, Seaborn, Matplotlib, Plotly
- **Programming Languages:** Python (Numpy, Pandas, Sklearn)
- **Machine Learning & Deep Learning:** Tensorflow, Keras, Pytorch, OpenCV, NLP
- **Database Management:** My SQL, PostgreSQL
- **Web Development & Deployment:** Flask, HTML, CSS, Basic React JS, Basic Springboot

PROJECTS

Facial Recognition System (Siamese Neural Network) (Deep Learning): **[Project Link]**
- Developed a high-accuracy facial recognition system achieving **95% accuracy** using a Siamese neural network with real-time face detection via Mediapipe.
- Enhanced model performance by **30%** through binary cross-entropy loss and Adam optimizer.

Credit Card Fraud Detection (Machine Learning) **[Project Link]**
- Implemented a Stochastic Gradient Classifier with Grid Search CV, resulting in a 15% increase in fraud detection accuracy.
- Addressed data imbalance using the Box-Cox technique and normalized features to reduce variance by 25%.

Movie Recommendation System (Machine Learning) **[Project Link]**
- Utilized NLP techniques for analyzing over 20,000 movie descriptions and recommending similar films with a 70% user satisfaction rate using Cosine Similarity.
- Improved recommendations through data preprocessing and feature extraction, leading to 20% increase in user engagement.

Diabetes Prediction System (Machine Learning) **[Project Link]**
- Established classification models (Logistic Regression, Decision Tree, SVC) achieving **85% prediction accuracy** for diabetes diagnosis.
- Optimized model performance with Hyper parameter Tuning and thorough data wrangling reducing misclassification by **40%**.

Sales Dashboard for Atlitic Hardware (Power BI, Excel, SQL): **[Project Link]**
- Created an interactive Power BI dashboard merging Excel and SQL data to analyze regional sales performance, leading to a **25% increase** in quarterly revenue.
- Offered insights into sales trends and product performance for strategic decision-making that elevated sales forecasting accuracy by **30%**.

Id Card Creation and Management System (Government Project):
- **Designed and developed a full-stack ID Card Management System** using **React, Spring Boot, and PostgreSQL**, enabling employees across all NIC offices in Haryana to generate, preview, and submit ID cards, with a secure dual-login system for Employees and Admins.
- **Spearheaded a scalable and production-grade government web portal** now actively used across **all NIC offices in Haryana**, facilitating seamless ID card approval workflows, image compression, PDF generation, and role-based access control for over 500+ officers.

EXPERIENCE

Machine Learning Engineer and Frontend Developer
National Informatics Center | Jan 2025 - Present

- **Developed and deployed** a **Transformer-based autocomplete and grammar correction system (GPT-2)** for doctors' medical reports, improving documentation accuracy and typing efficiency by **~32%** across NIC's MedLEpR platform.
- **Researched and developed a Generative Adversarial Network (GAN) model** to simulate wound patterns based on knife characteristics (serrated, non-serrated, curved blades) for forensic analysis. Conducted dataset preparation, model experimentation, and evaluation; **prototype training and scaling were constrained by limited GPU resources**, providing valuable insights into computational optimization and generative model behavior.
- Spearheaded a **production-grade government web portal** with approval workflows, image compression, PDF generation, and role-based access control, now used by **500+ officers across NIC offices in Haryana**.
- Working as a **full-time frontend developer**, building scalable, user-friendly modules in React for MedLEpR, a national platform used by doctors and forensic labs across India.
- **Designed and delivered** the **ID Card Creation and Management System** using React, Spring Boot, and PostgreSQL, enabling NIC Haryana employees to generate, preview, and submit ID cards with a secure dual-login system (Employees/Admins).

Data Science Intern
Acmegrade | Feb 2024 - Apr 2024

- Conducted data pre-processing, exploratory data analysis (EDA), and feature engineering to derive actionable insights.
- Developed interactive data visualization dashboards using Power BI and Excel, along with machine learning models to address various business needs.

Machine Learning Engineer Intern
The Sparks Foundation | Jun 2024 - Jul 2024

- Performed exploratory data analysis and feature engineering to extract insights and inform model development.
- Built and validated machine learning models using cross-validation techniques, generating reports to effectively communicate findings to stakeholders.

COURSE

- **Oracle Cloud Infrastructure 2025 Certified Generative AI Professional | Oracle University | 2025**
- **Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate | Oracle University| 2025**
- **Python for Data Science | University of Michigan, Coursera | 2023**
- **IBM Data Analyst Professional Certificate | IBM, Coursera | 2024**