Chetan Kumar

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Github | LinkedIn | Portfolio | Medium | Blogs

Education

Chhattisgarh Swami Vivekananda Technical University 2020 - 2024
Bachelor's in Computer Science and Engineering |

Experience

IIT Bhilai Jan 2025 - Present

Research and Development Intern *Machine Learning, Time Series, ReactJS, Python*

- Currently engaged in Research and Development at **IIT Bhilai**, under the guidance of **Dr. Gagan Raj Gupta**, Associate Professor (CSE) and Head of Mechatronics, focusing on AI/ML applications in steel manufacturing.
- Conducting time-series analysis for **cobble detection** in the **Bhilai Steel Plant** — the largest steel plant in India — to improve predictive maintenance.
- Designing and implementing **real-time anomaly detection** models using applied machine learning techniques to identify early signs of equipment failure.
- Developing intelligent systems for **failure prevention and cobble detection**, significantly enhancing operational efficiency on the production line.
- Utilizing tools such as **Grafana**, **Pandas**, and **NumPy** for sensor data analysis and insightful visualizations.
- Built an **AI-powered alarm monitoring system** using **Flask** and **ReactJS**, enabling real-time alert generation, segmentation, and feedback integration for smarter decision-making.

Parsl

Open-Source Contributor *Python, Git, CI/CD*

- Contributed to a **Parallel Scripting Library** Parsl project under the **University of Chicago**
- As a contributor, I have fixed handlers that work differently in the latest version of Python, and it is not safe to use Python 3.12.
- See my merged Pull request here

Projects

Alerts Segmentaion Dashboard *Python, Numpy, Pandas, Streamlit, NLP, Machine Learning*

- Developed an interactive dashboard for **real-time alert analysis** with region-wise, signal-wise, and hourly distribution insights.
- Integrated a file upload **Automated 95%** of manual alert review by correlating alarms and highlighting unstable regions for faster diagnosis.
- Enabled root cause analysis by integrating historical data trends and visual correlation across multiple alert signals.
- **Live link**

Text Analysis App *Python, Numpy, Pandas, Streamlit, NLP, Machine Learning*

- A feature-rich text analysis application using Pyhton, numpy, panda, Natural language toolkit. This project has functionality like **Stress detection, Spam detection, Sentiment analysis and Sarcasm detection**
- The application allows users to **input any text** and accurately identifies if the text is spam, expresses a sentiment, shows signs of stress, or contains sarcasm.
- **Real-time Analysis:** The app performs analysis in real time, providing instant feedback on the user's input.
- **Live link**

Certifications

JPMorgan Software Engineering Virtual Experience

100xDevs Full Stack Open Source Cohort

Skills

Python, Machine Learning, Grafana, Postgres, SQL, ReactJS, HTML, CSS, Github, Git, Linux, Docker, CI/CD, Problem Solving, Tailwind CSS