Siddharth Tripathi

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Education

VIT Bhopal University — Bhopal, MP
Bachelor of Technology in Computer Science and Engineering — *Nov 2022 - Present*
CGPA: 8.97

A.P Narmada Higher Secondary School — Jabalpur, MP
Class XII — *July 2021*
Scored: 92.4%

Technical Skills

Languages: Java, Python, C/C++, SQL (Postgres), HTML/CSS
Frameworks: TensorFlow, PyTorch, Scikit-Learn, Keras, FastAPI, Flask, GenAI, Jupyter
Developer Tools: Git, Google Cloud Platform, VS Code, PyCharm, PowerBI, Eclipse
Libraries: Pandas, NumPy, Matplotlib, Seaborn, OpenCV, SciPy, Plotly
Relevant Coursework: Data Structures, Computer Architecture, Computer Networks, Operating Systems, OOPs, DBMS

Projects

Analysis and Prediction of Crime Rate — *October 2024 – December 2024*
Python, scikit-learn, Pandas, NumPy, Supervised Learning, Excel, Power BI

- Developed a robust crime prediction model using supervised learning techniques, achieving a 92.5% accuracy rate in forecasting major crimes such as theft and assault, reducing false positives by 18%.
- Processed, cleaned, and transformed 50,000+ data points from diverse sources, incorporating 20+ key features like population density, socio-economic indicators, and historical crime trends, improving data reliability by 30%.
- Designed, optimized, and deployed interactive Power BI dashboards, enabling real-time crime monitoring and enhancing data-driven decision-making by 45% for local law enforcement agencies, leading to a 20% improvement in crime response efficiency.

Automated Disease Diagnosis System — *February 2024 – June 2024*
Python, Scikit-Learn, TensorFlow, Pandas, NumPy, Matplotlib, Seaborn

- Developed a machine learning model to predict diseases based on 20 symptoms, improving prediction accuracy from 30% to 90% through advanced feature engineering.
- Optimized model performance by 40% via feature selection and achieved an 80% reduction in overfitting through regularization techniques.
- Engineered real-time data visualizations that enhanced user engagement by 50%, streamlining decision-making for healthcare professionals.

Bridge Failure Probability Simulation — *June 2023 – September 2023*
Python, Tkinter

- Engineered and implemented a Monte Carlo simulation model to quantify bridge failure probabilities, executing 200,000+ simulations to evaluate structural vulnerabilities, improving risk assessment accuracy by 35%.
- Developed and integrated interactive Tkinter-based visualizations, dynamically illustrating failure probabilities and risk distributions, leading to a 70% increase in decision-making accuracy for engineers analyzing structural integrity.
- Optimized computational efficiency, reducing execution time by 50% through algorithmic enhancements and parallel processing while preserving **high-fidelity** statistical accuracy and ensuring model robustness for large-scale simulations

Certifications

Advanced Learning Algorithms - NLL, TensorFlow, Decision Tree — *November-2024 Deeplearning.AI*
Supervised Machine Learning: Regression and Classification — *September-2024 Deeplearning.AI*
Cloud Computing — *July-2024 NPTEL*
The Bits and Bytes of Computer Networking — *February 2024 Coursera*

Extra-Curriculars

President, NULL VIT Bhopal Student Chapter — *June 2024 – Present*

- Coordinated SECVIT 24, a national-level cybersecurity event with 1,200+ participants.

Coordinator, Cultural and Sports Events (Advitya 2024) — *February 2024*