ADITYA RAJAN

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EDUCATION

University of Illinois at Urbana-Champaign Expected May 2026
Bachelor of Science in Statistics & Computer Science GPA: 3.93/4.00

Relevant Coursework
Data Structures, Computer Architecture, Linear Algebra w/ Computational Appl., Calculus III, Probability & Statistics

TECHNICAL SKILLS

Programming Languages: Java, C++, Python, Rust
Frameworks/Tools: Git, Docker, VSCode, Android Studio
Libraries: TensorFlow, Scikit-learn, PyTorch, OpenCV, NumPy, Pygame, Clap, Tokio

EXPERIENCE

Madhya Pradesh State Electronics Development Corporation Bhopal, M.P. India
Machine Learning Intern May 2024 – June 2024

- Analyzed family registration data to integrate registration processes with the state government's Single Citizen Database (*Samagra ID*) for ~24 million registered citizens
- Implemented video-based KYC for the ongoing *Samagra* e-KYC project using machine learning in Python
- Assisted with automating state and national ID linking for state citizens

Madhya Pradesh State Knowledge Management Centre for Climate Change Bhopal, M.P. India
Data Science Intern June 2022 –July 2022

- Analyzed climate data and its impact on different sectors across the state (agriculture, public health etc.)
- Conducted elementary predictive analysis on regional climate trends using Python
- Assisted with organizing a state-level conference of climate experts

PROJECTS

CRISPR-Cas9 Off-Target Prediction Tool (Python – Scikit-learn, Pandas, NumPy etc.) January 2025

- Engineered a data analysis pipeline (processing, feature extraction, EDA) for a dataset of 340,000+ gRNA sequences, extracting relevant features (e.g., GC content, sequence length, Levenshtein distance) to optimise model performance
- Developed and evaluated predictive machine learning models (Logistic Regression, XGBoost), achieving ROC-AUC scores exceeding 93%
- Implemented sequence-to-numeric transformations (one-hot encoding) to retain critical sequence information for ML applications

Network Port Scanning CLI Tool (Rust – Clap, Tokio) May 2024 – June 2024

- Created a user-oriented, nmap-like CLI tool that scans network ports (TCP, HTTP, etc.) in Rust
- Implemented multithreading, asynchronous code, logging & error handling for optimization
- Analyzed Rust networking documentation, crate management & production methods
- Understood fundamentals of networking & cybersecurity applications

A* Search Algorithm Visualiser (Python – Math, Pygame) Aug 2023 – Sept 2023

- Developed an interactive visualization tool for A* Search Pathfinding Algorithm in Python
- Implemented A* Graph Traversal to find the Single-Source Shortest Path (SSSP) in a user-generated maze-like graph
- Recorded mouse events & built responsive UI elements with the Pygame library

Facemask Detection Tool (Python – NumPy, OpenCV, Scikit-learn) April 2023 – June 2023

- Developed a ML-based facemask detection tool during COVID-19 using SVM (Support Vector Machine)
- Implemented SVM using sklearn, used PCA for dimensionality reduction of data, achieved final accuracy of 96.2%
- Utilised OpenCV to handle computer vision, real-time webcam input and supplementary data collection