Aditya Sasidhar

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EDUCATION

- **Vellore Institute of Technology** 2023–Present
- Bachelor of Technology in Computer Science (specialization in Artificial Intelligence and Machine Learning)
- Current GPA: 8.04/10

EXPERIENCE & PROJECTS

- **The Red Users – Cybersecurity Intern** Feb 2025 – Mar 2025
  - Implemented network and web security measures, identified SAP vulnerabilities, and analyzed traffic with Wireshark to detect and mitigate threats, learned about potential threats and gained valuable insights.
- **SafeSurf Junior – MP Police Cyber Safety Awareness Hackathon (3rd Place)** 2024 – 2025
  - Developed an AI based browser extension to filter harmful content for children, reducing exposure by ∼90%, and implemented an automated alert portal to notify law enforcement of potential legal violations.
- **TrojaNix - IIT Madras Malware Analysis Hackathon (Finalist)** 2023 – 2024
  - Trained ML and DL models for malware classification, achieving ∼98% detection accuracy.
  - Analyzed large malware datasets, refining features for improved precision and employing methods for data enrichment.
- **GenAI based dynamic Game env generator** May 2025 - May 2025
  - Associated with Vellore Institute of Technology.
  - An interactive game built with Python and Pygame that lets users modify maps using natural language prompts, powered by LLMs via the Groq API (Meta Llama 4 Maverick).
  - Key features include real-time terrain transformation, procedural map generation, and a built-in chatbox for user-AI interaction. This project demonstrates the integration of generative AI into game development workflows.
- **Gemini based Cybersecurity Agent** Vellore Institute of Technology
  - Developed an autonomous cybersecurity agent using Google's Gemini LLM to execute Linux commands, perform pen-testing, and run diagnostics via natural language.configurations, and run security diagnostics—all through natural language input.
  - Integrated GenAI for multi-turn reasoning with system-aware memory and robust error handling.
  - Used subprocess and platform Python libraries to interface with the local system, enabling autonomous command execution and analysis. Utilized Python's `subprocess` and `platform` libraries for secure terminal interfacing, wrapped in a modular, prompt-engineered framework with Git-based version control
- **Info Finder**
  - Built a privacy-first web application for summarizing and answering questions from plain text or URLs, powered by Google's Gemma 3 model (via Hugging Face), providing instant, secure information access.
  - Features local-only processing, secure web scraping, content chunking, and context-aware Q&A directly in-browser or via command line, offering users efficient, confidential information retrieval and enhanced data privacy.
- **Student Performance Analysis**
  - Built a data-driven framework to explore how various factors impact student grades using Python (Pandas, Scikit-learn, Seaborn).
  - Identified patterns, correlations, and developed insights for early intervention strategies, revealing strong predictive power of mid-term grades, absenteeism, and study habits.
- **Efficient Fashion MNIST Classification with CNN Models**
  - Implemented and compared CNN architectures for classifying fashion items from the Fashion MNIST dataset, demonstrating building, training, and evaluating models.
  - Includes basic and improved CNN models (using SeparableConv2D), with detailed visualizations of confusion matrices, classification reports, and accuracy/loss curves.
- **International Robotics Competition (Group Leader)** 2016 – 2018
  - Led a five-member team to design and build competitive robotics models, placing in the top 10 out of 150+ teams.
  - Coordinated tasks and timelines, ensuring on-time project completion for international events.

CORE SKILLS

- **Programming Languages:** Python, C, C++, Java, HTML, CSS, Javascript, MATLAB
- **Machine Learning & Data Science:** Scikit-learn, Logistic Regression, SVM, Random Forest, Gradient Boosting, XGBoost, LightGBM, K-Means, DBSCAN, PCA, t-SNE, Decision Trees, Naïve Bayes, KNN, Lasso, Ridge, SVR, Hyperparameter Tuning, Cross-Validation, Model Evaluation, Feature Engineering, Dimensionality Reduction, Data Engineering
- **Deep Learning & Generative AI:** TensorFlow, Keras, Pytorch, Transformers, Hugging Face, LSTMs, GRUs, CNNs, Diffusion Models, BERT, GPT, Stable Diffusion, LoRA, Attention Mechanisms, Transfer Learning, Model Fine-Tuning, Tokenization, Prompt Engineering, Generative AI, Gemini API, Large Language Models (LLM), Large Language Model Operations (LLMOps)
- **Data Analysis & Visualization:** NumPy, Pandas, Matplotlib, Seaborn, SciPy, Plotly
- **Cybersecurity:** hashlib, pefile, Wireshark, Basic Pen-testing, Computer Networks, Debian