# ADI NARAYAN PRASAD

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## OBJECTIVE

Aspiring Software Developer with expertise in Python, Machine Learning, and Computer Networks, focused on designing scalable systems and solving complex engineering problems in real-world applications.

## EDUCATION

**BMS College of Engineering**, Bengaluru, Karnataka — *2023 – Present*
*Bachelor of Engineering in Information Science and Engineering* — *CGPA: 8.8*

**BGS PU College**, Ramanagara, Karnataka — *Pre-University Course (PCMB) | Percentage: 95%* — *2021 – 2023*

**Vasavi Vidyanikethan**, Ramanagara, Karnataka — *SSLC | Percentage: 99%* — *2011 – 2021*

## EXPERIENCE

**PROJECT INTERN – HEWLETT PACKARD ENTERPRISE (HPE)** — *Feb 2026 – June 2026*
*Bengaluru*

- Engineered the core data ingestion pipeline for an HPE threat detection system, managing raw network datasets and streaming them in real time.
- Configured and containerized Zeek, Elastic Beats, Elasticsearch, and Apache Kafka using Docker Compose to collect, index, and safely buffer over 100K network event logs.
- Set up secure public network tunnels using ngrok, creating a live login gateway so team members and stakeholders could easily access and verify the system.

**RESEARCH INTERN – CARNEGIE MELLON UNIVERSITY (CMU)** — *June 2026 – Present*
*Bengaluru*

- Designing an open-source benchmarking framework to evaluate the performance, speed, and cost efficiency of sketching data structures against traditional database queries.
- Developing a real-time leaderboard to track and compare metrics like accuracy, memory usage, and query processing time across various large-scale datasets.
- Implementing and testing core sketching algorithms (such as HyperLogLog and Count-Min Sketch) to optimize approximate analytics for high-volume data streams.

## PROJECTS

**LLM-DRIVEN AUTONOMOUS NETWORK MONITORING (LINK)** — *Python, Scapy, Llama*

- **Engineered** a real-time network monitor using **Scapy** and **Wireshark** to capture telemetry and simulate multi-vector attacks like **ICMP/SYN Flooding** and **Port Scanning**.
- **Integrated Llama (LLM)** to perform automated root-cause analysis, transforming raw packet signatures into natural language security insights for rapid incident response.
- **Automated Threat Mitigation** by developing a Python-based **Blackhole Routing** system to instantly isolate malicious IPs, neutralizing threats with zero collateral impact.

**INTRUSION DETECTION SYSTEM (LINK)** — *Sklearn, XGBoost, Pandas*

- **Built** an ML pipeline to detect **11 types of network attacks**, benchmarking 7 different models to find the most accurate defender.
- **Engineered** an ETL pipeline to process raw traffic data, converting complex behavioral features into ML-ready formats.

**SUSTAINABLE LLM OPTIMIZATION (GREEN-AI) (LINK)** — *DistilGPT, Carbon Tracking, Python*

- Designed a **"Smart Switch"** to dynamically route queries between lightweight and large LLMs to reduce compute costs.
- Integrated a **Carbon Tracking system** to measure CO2 emissions per inference.
- Optimized cloud performance by routing tasks to global regions based on real-time **latency**.

## SKILLS & CERTIFICATIONS

**Technical Skills:** Python, SQL, JavaScript, HTML/CSS, Bash, Supervised Learning
**Tools & Systems:** Git, HashiCorp Vault, Mininet, MongoDB, MySQL, VS Code, Docker, Linux
**Soft Skills:** Problem Solving, System Design Thinking, Team Collaboration, Debugging Mindset
**Certifications:** Supervised ML (DeepLearning.AI), Google Cloud Engineering, DSA in Python (NPTEL)

## EXTRA-CURRICULAR ACTIVITIES

- **Operational Leadership:** Managed inventory procurement, cooking operations, and gardening maintenance at **Sri Ramakrishna Student's Home**.
- **Inter Hostel Codethon:** Two-time winner (First Place), demonstrating exceptional problem solving skills under competitive time constraints.