Dhairya Bhanderi

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SUMMARY

AI Automation Engineer with mid-level experience building scalable, intelligent ecosystems using GenAI and cloudnative tools. Designed and delivered a full Model Context Protocol stack and highthroughput JSONRPC 2.0 servers that enabled realworld LLM automation and improved DevOps efficiency. Led the creation of an LLMpowered assistant that cut threatreport triage time by 35% and integrated secure, productiongrade deployments. Seeking to leverage AIdriven automation expertise to accelerate product innovation and reliability.

EXPERIENCE

Qualitest Group **Jun 2025 - Present**

AI Automation Engineer (GenAI & MCP Ecosystem) *USA*

- Designed and implemented a complete Model Context Protocol (MCP) stack from scratch—including custom Selenium, Playwright, Filesystem, and CLI servers—enabling LLMs to perform real-world automation via structured tool invocation, aligning with full product lifecycle principles.
- Built JSON-RPC 2.0-compliant servers over Stdio/WebSocket with schema validation, session-state management, and concurrent request handling for high-throughput LLM-agent execution, leveraging object-oriented programming concepts.
- Automated complex browser workflows using Selenium and Playwright to manage DOM interaction, multi-tab navigation, screenshot streaming, state persistence, parallel session pooling, throttling, and telemetry for robust UI-based AI testing.
- Delivered a sandboxed Filesystem Server with streambased I/O, metadata tracking, and safe command parsing, enabling secure project inspection and editing, which enhanced platform security
- Implemented a secure CLI Server for Git, Docker, and OS commands with isolation, privilege control, and realtime output streaming, which streamlined the product delivery cycle
- Developed a Spring Boot 3.2 MCP client that autodiscovers servers, manages concurrent sessions, and routes requests through a finetuned LLM, enabling faster request processing and demonstrating robust objectoriented design
- Built an interactive Claudestyle LLM UI using React, TypeScript, Tailwind, and Framer Motion that supports conversational automation, live task logs, toolcall tracing, and realtime execution visualization, which helped secure client approval during presentations
- Enhanced system reliability and observability by adding circuit breakers, recovery mechanisms, structured logging, and telemetry, which led to more self-correcting and resilient LLM operations, thus improving system uptime
- Deployed the solution internally for QA, DevOps, and MLOps orchestration, reducing manual workflows by 70% and increasing automation coverage by 40% while continuously adding new features

ProNoesis **Mar 2025 - May 2025**

AI & Cybersecurity Intern *Columbus, Ohio*

- Built an LLM-powered assistant using OpenAI API and LangChain to summarize threat reports and automate incident triage, improving analyst response speed by 35% and supporting swift product iteration.
- Trained ML models with Scikit-learn and PyTorch on authentication logs to flag insider threats and unusual access patterns, achieving 92% accuracy
- Prototyped a module to dynamically generate ZeroTrust IAM and RBAC policies based on contextual user behavior and risk scoring, reducing policycreation time and enabling compliance in a regulated environment
- Applied BERTbased NLU models to parse and classify phishing emails, achieving 95% precision in malicious email detection during testing
- Deployed FastAPI microservices that integrated LLM insights into IAM workflows, containerizing with Docker to ensure seamless scaling and support for team demos and technical sales.

Sharvaya Infotech **Jan 2022 - Jun 2022**

Junior Developer Intern *India*

- Re-wrote nightly data-prep scripts in Python (Pandas, SQLAlchemy) to feed ML models, reducing batch runtime by 40% and supporting a smooth product lifecycle from data ingestion to deployment.
- Fine-tuned a pretrained BERT model on 8K help-desk tickets for a ticket-classifier proof-of-concept, achieving 97% precision in routing 'urgent' issues and showcasing integrated AI/ML capability.
- Exposed the classifier via FastAPI and integrated it with legacy ASP.NET MVC modules, linking C# and Python in production, which enabled realtime routing of tickets
- Implemented CI/CD processes with GitHub Actions to build Docker images, run unit tests, and deploy to an Azure App Service dev slot, reducing release rollbacks by 90% and emphasizing continuous delivery.

Image Web Solution **Jul 2020 - Dec 2020**

ML Intern *India*

- Embedded a TensorFlow.js recommender widget for real-time product recommendations, increasing average session length by 18% and demonstrating rapid feature deployment.
- Developed an auto-tagging pipeline using a lightweight Python scraper combined with a FastText model to tag over 1K product images, reducing manual tagging hours by 70% and enhancing process automation.
- Deployed the recommender as a serverless function on Azure Functions with a coldstart time under 300ms, delivering realtime recommendations with sub300ms latency and enabling seamless product lifecycle management from concept to scalable deployment

PROJECT EXPERIENCE

AI Legal Document Analyzer (LangChain + Gemini + Streamlit) **Jan 2025 - Feb 2025**
Personal Project

- Developed an AI analyzer that converts legal documents into structured **Benefits vs Risks** insights using **LangChain + Gemini Pro**.
- Built **FastAPI** endpoints and a **Streamlit UI** supporting **PDF/TXT upload + text paste**, chunking, and exportable results.
- Added guardrails (size limits, sanitization, stateless processing) with typical end-to-end analysis in **~10–15 seconds**.

Graduate Capstone - Big Data Security Analytics **Sep 2024 - Dec 2024**
University of Dayton

- Designed a data pipeline (Kafka 'Spark 'AWS SageMaker) to process the 5M-row CICIDS-2017 intrusion dataset.
- Tuned and deployed an XGBoost model achieving 85% F1 score for real-time intrusion detection.
- Implemented serverless inference with AWS Lambda and automated model retraining upon feature drift >5%.

Healthcare Management System (Microservices + React) **Jan 2024 - Mar 2024**
Software Engineering Coursework

- Built a full-stack healthcare platform using **React + TypeScript (Material UI)** and **Spring Boot 3 + Spring Cloud** microservices for patient/doctor/appointment management.
- Implemented **API Gateway**, **Eureka** service discovery, **Config Server** centralized config, and **Zipkin** distributed tracing for end-to-end observability.
- Deployed with **Docker Compose + GitHub Actions CI/CD** and validated performance using **K6**: **+25% throughput (16.7 req/s)**, **-44% P95 latency (420ms)**, **-30% deploy time**, **0.8% error rate**.

Twitter Sentiment Analyzer (Bi-LSTM + FastAPI + Power BI) **Jan 2023 - Apr 2023**
Advanced Programming & Data Structures (CPS 501)

- Collected/cleaned **500K+ tweets** and trained a **Bi-LSTM** sentiment model achieving **0.85 F1 / 0.87 accuracy**.
- Deployed a **FastAPI** inference API supporting single and batch predictions with low-latency serving.
- Built a **Power BI dashboard** to visualize sentiment trends by hashtag, time, and geography for marketing case study insights.

Text Summarization Tool (BART + FastAPI) **Feb 2023 - May 2023**
System Analysis (CPS 542)

- Built a summarization engine using **BART (facebook/bart-large-cnn)** with a **FastAPI** REST service and **Flask UI** for interactive summarization + file upload.
- Added configurable decoding (beam search, length controls), **input validation**, and **hallucination/faithfulness checks** to improve reliability.
- Implemented **ROUGE-based evaluation** and optimized inference (singleton model loader, GPU/CPU auto-detect) achieving **~35% compression** and **~2.1s per 500-word doc** (benchmark).

EDUCATION

University of Dayton, USA **Jan 2023 - Dec 2024**
Master of Science, Computer Science *Dayton, Ohio*

- **GPA:** 3.5

Navrachana University, India **Jun 2018 - May 2022**
Bachelor of Technology, Information Technology *Vadodara, India*

- **GPA:** 3.7

TECHNICAL TOOLBOX

- **Languages & Frameworks**: Python, Java, JavaScript, TypeScript, Spring Boot, FastAPI, Flask
- **AI/ML/GenAI**: LangChain, OpenAI API, PyTorch, Scikit-learn, BERT, BART, FAISS, LLM
- **Automation & MCP Ecosystem**: Model Context Protocol (MCP), JSON-RPC 2.0, Selenium, Playwright, CLI & Filesystem Servers
- **Cloud & DevOps**: AWS (SageMaker, Lambda, S3), Docker, GitHub Actions, Azure App Service
- **Data & Security Analytics**: Kafka, Spark, Pandas, SQLAlchemy, XGBoost, IAM / RBAC Policy Automation
- **Web & UI Development**: React, Tailwind CSS, Framer Motion, Streamlit
- **AI-Powered Development Tools**: Cursor, Windsurf, Claude, Warp, GitHub Copilot, ChatGPT
- **Version Control & Productivity**: Git, GitHub, Postman, Power BI, Jira
- **Software Engineering Fundamentals**: Object-oriented Programming, Software Development Life Cycle

CERTIFICATIONS

- **AWS Certified Solutions Architect – Associate:**Amazon Web Services (AWS) April 2025
- **AWS Certified AI Practitioner:**Amazon Web Services (AWS) March 2025
- **AWS Certified Cloud Practitioner:**Amazon Web Services (AWS) February 2025
- **IBM Data Science Professional Certificate:**Coursera August 2023
- **Python for Data Science & Machine Learning:**Udemy June 2023
- **Introduction to Artificial Intelligence:**edX May 2023
- **AI-900: Microsoft Azure AI Fundamentals:**Microsoft May 2022
- **Azure AI Fundamentals:**Microsoft May 2022