Udit Verma

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PROFESSIONAL SUMMARY

Software Engineer with over 2 years of experience delivering secure, high-performance solutions in government and commercial environments. Skilled in Python, Java, C, Rust, and TypeScript, with expertise in frameworks like React, Django, and FastAPI, as well as tools like Docker and Kubernetes. Demonstrates strengths in microservices architecture, CI/CD pipelines, and cloud platforms (AWS, Azure). Holds industry-recognized certifications in machine learning, artificial intelligence, and cloud computing. Integrates advanced technologies, creates tools for both internal and external use, and optimizes data pipelines for reliability and performance, ensuring compliance and efficiency in every phase of development.

PROFESSIONAL EXPERIENCE

Software Engineer   May 2024 – Present
EngineeRD Solutions   *Fairfax, VA*
- Spearheaded the development of a caregiver burnout prevention application, leveraging Swift and UIKit for a responsive and intuitive user interface, and integrated Core Data for offline persistence, achieving 99.99% uptime.
- Engineered a scalable microservices architecture to handle 10,000+ concurrent user requests per second, utilizing FastAPI and Prometheus for performance monitoring, and Azure VMs for deployment.
- Built an authority-to-operate (ATO) copilot for the Department of Defense (DoD), improving internal workflow, workpaper accuracy, and completion timeline by 15% through holistic understanding techniques (RAPTOR).

Student Researcher   August 2024 - December 2024
George Mason University   *Fairfax, VA*
- Developed a privacy-preserving training and usage theory for large language models, increasing privacy alpha by 30%
- Leveraged AWS GPU instances to reduce computational time by 45%, while building expertise in high-performance computing and large-scale machine learning deployment.
- Implemented a hybrid framework (privacy budget allocation, differential privacy) to emulate privacy techniques seen in foundation LLMs (GPT, Llama, Gemini), improving model privacy while preserving accuracy in response

Software Engineer Co-op, AI / ML   May 2022 – December 2024
Atikin Consulting   *Washington, DC*
- Deployed machine learning models via AWS services (Lambda, S3, Bedrock, and SageMaker) leveraging company datasets to deliver data-driven insights and improving IT anomaly detection, financial forecasting, and customer segmentation by over 25%.
- Created an automated retrieval augmented (RAG) and cache augmented generation (CAG) pipeline delivering highly accurate and quick relevant responses to internal employee inquiries, improving operational efficiency and response time by 99%.
- Collaborated on a full-stack project to automate marketing and communications departments, managing system architecture, optimizing data pipelines, and reducing system errors.

PROJECTS

Open-Source Intelligence Dashboard | *Python, React, Javascript, AWS, Docker*
- Steered the team to develop a high-performance, high-accuracy open-source intelligence dashboard using Python's asyncio and aiohttp, extracting data from 100+ public websites, forums, and dark web sources.
- Implemented sentiment analysis using random forests, support vector machines, and AdaBoost, achieving 98% accuracy on all sourced information, and enabling real-time filtering, classification, and metrics handling.
- Optimized database queries, improving overall efficiency and cutting search time by over 70%.

Data Cleaning and Optimization Platform | *Rust, React, Typescript, LLMs, Docker*
- Led development of an end-to-end data cleaning and optimization system using AWS services (Lambda, Bedrock, SageMaker, S3) and local machine compute resources, processing, cleaning, and sorting 1 TB of data in under 30 minutes.
- Conducted real-time analysis of documents using Amazon Rekognition, Textract, and Transcribe with secure programming practices to ensure 100% data security on all consumer level files.
- Guided cross-functional team to integrate development between various operating systems (MacOS, Windows, and Linux) as well as forward facing teams (Website, Sales, and Implemntation) for personal and enterprise level clients interested.

EDUCATION

George Mason University, Honors College   Fairfax, VA
Bachelor of Science in Computer Science

TECHNICAL EXPERIENCE AND ACCOMPLISHMENTS

Programming: Python, Java, C, C++, Rust, Swift, Golang, Javascript, Typescript, Assembly, SQL
Libraries and Frameworks: PyTorch, TensorFlow, scikit-learn, Jupyter, React, Flask, Django, LangChain,
Developer Tools: AWS (EC2, S3, DynamoDB, Lambda, SageMaker, Amplify, Bedrock, ECS), Azure, Git, Docker, Kubernetes
Certifications: AWS Certified Cloud Practitioner and AWS Certified Machine Learning, Azure AI Engineer