SAKSHAM LAKHERA

Software Development Engineer

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Skills

- **Database & Languages:** Python, JavaScript, TypeScript, C, C++, Java, Shell, Bash, PHP, MongoDB, PostgreSQL, SQL, NoSQL, Redis, HDFS, YAML, XML (Metadata)
- **Dev Tools:** Docker, Kubernetes, Flask, Nginx, Airflow, Linux/Unix, TensorFlow, pytorch, Cuda, Grafana, Terraform, Spark, Kafka, HTML/CSS, Jenkins (CI/CD), Artifactory, Swagger, OpenSSL, Azure (Cloud Computing), AWS, Git (version control), Wireshark, Scrum

Professional Experience

Software Engineer II, Akamai Technologies — *DDoS mitigation, Network Security*   *Nov 2022 – Jul 2024*
Hired by Akamai Technologies, a global leader in API security, to develop features that prevent bot traffic on APIs.

- Revamped "Crypto Challenge", a bot deterrence feature from a Django server to edge servers in C, restructured the framework for distributed handling, reduced server hops, doubling verification speed, and boosting customer adoption from **107 to 243**.
- Engineered "Adaptive Challenge," a stateless bot detection feature using JavaScript, Java, AngularJS and Akamai Metadata, integrated into 27 customer solutions and serving millions of users daily. (Patent filed for version 2)
- Engineered the "Hype Event" feature using AngularJS, Java, Akamai metadata and Python, optimizing stability during peak loads with cookie-based state management for bot detection, reducing server load by 70 million requests/day.
- Optimized memory usage per request by **14% (42KB to 36KB)** by automating config delivery via Jenkins, analyzing execution logs in Amazon S3 with Python to track unused variables, and visualizing cleanup points using Grafana.
- Developed and deployed Flask-based REST APIs on a Kubernetes cluster to monitor release impacts across 365,000 servers, integrating MySQL, OpenSSL, SSL/TLS, RBAC and multi-source data integration for real-time alerts, reducing release rollback time by **75%**.

Software Engineer, Akamai Technologies — *Anomaly detection, Big data Analysis*   *Aug 2020 – Oct 2022*
Hired to build platforms for integrating log data and providing actionable insights to customers.

- Deployed and managed a **70-node distributed database cluster** on Azure for SLA tracking. Automated cluster provisioning, pipeline creation, database setup, and key management with Terraform, reducing manual effort by **95%**.
- Built data pipelines, optimized schemas, and created efficient views, automated ETL operations via Airflow and employed advanced SQL techniques resulting in a **30% improvement** in BI system performance.
- Implemented cluster monitoring with Prometheus and Grafana, tracking key metrics and triggering alerts.
- Developed a secure Python-based application interface (Open API standards) over a Spark data warehouse, enabling advanced queries with ORM, incorporated OAuth 2.0 and JWT for secure user authentication and authorization.

Education

University at Buffalo - SUNY, *Master's, Computer Science (AI/ML), USA*   *Aug 2024 - Dec 2025*
RV College of Engineering, *Bachelor's, Computer Science*   *Aug 2016 - Aug 2020*

Awards and Leadership

Awards: Akamai STG Thunderclap Award, 6 times Akamai Megabyte Award, Most Creative Rotaractor
Director, Rotaract RVCE: Managed 200+ volunteers in 60+ social service events.
Patent, Lead Inventor: Proof of work, space and time challenge for computer network attack prevention

Projects

- **Blockchain-based JS Obfuscation** — Redis, Docker, Blockchain, SQL, Cryptography
  - Designed a blockchain-inspired JavaScript obfuscation application with function chaining, leveraging Redis to store verification results, ensuring browser-based execution, and mitigating JS bypassing attacks.
- **Mental Health Assessment** — Streamlit, TensorFlow, Data Analysis, Data Science, Machine Learning, AI
  - Built a mental health assessment application using Streamlit and SQLite to evaluate daily routines, parental responses, and substance abuse factors. Implemented ML models (XGBoost, Logistic Regression, Random Forest) with 91% accuracy to predict potential mental health disorders and provide actionable insights.