Ria Banerjee

Full Stack Software Developer

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PROFESSIONAL SUMMARY

Full Stack Developer with expertise in Python, Go, Java, and JavaScript (React, Node), specializing in high-performance applications and microservices. Proficient in building test-driven RESTful APIs with database integration. Experienced in cloud platforms, containerization, and CI/CD pipelines. Skilled in real-time data processing using pub/sub architectures like Kafka and MQTT. Integrated 20+ third-party tools for scalable solutions and system enhancements. Collaborative and solution-focused, seeking to advance towards a Technical Architect role.

TECHNICAL SKILLS

- *Programming Languages*: Python, Go, Java, C# .Net, C++, C, Shell/Bash.
- *Web Development*: TypeScript, React, Node.js, HTML5, CSS, ElectronJS.
- *Frameworks & Tools*: Django, Flask, .NET Core, SpringBoot, Docker, Kubernetes, RESTful API, Kafka, MQTT, RabbitMQ, AWS, GCP, Git, Jenkins, Ansible, Grafana, ServiceNow.
- *Database Technologies*: MySQL, MongoDB, OracleDB, PostgreSQL, GraphQL, Redis, DynamoDB, SQLite, Cassandra..
- *Cloud & DevOps*: GCP, AWS(EC2, S3, Cloud Functions,Lambda, RDS) Docker, Kubernetes clusters, Jenkins, CI/CD, Nexus Lifecycle, SonarQube, GitOps.
- *Security and Monitoring*: Elastisticsearch, Kibana, Vault, SSL/TLS configuration.
- *Collaboration Tools*: Jira, Confluence, Slack, Microsoft Teams, Trello.
- *Machine Learning*: Pandas, TensorFlow, OpenAI APIs, Data Modeling, Machine Learning Algorithms, PyTorch, Scikit-learn.

WORK EXPERIENCE

Full Stack Developer, EAGL Technology Inc.   *May 2024-present | Albuquerque, NM*
Tech Stack: Python, Go, React, Shell, Bash, SQL, Docker, Flask, Kafka, MQTT
Project Description: *A gunshot detection system with sensors deployed in critical areas like schools and hospitals. The system enables users to monitor sensor health and receive real-time gunshot alerts, including details on timing, weapon type, and number of shots. Engineering efforts focus on building a gateway on IoT hardware that communicates with sensors, servers, and databases. Currently transitioning from on-premises to a cloud-based solution, including server setup, environment configuration, caching, and load balancing.*

- Led a full overhaul of legacy gunshot detection software into a modular architecture, using Flask-based REST APIs deployed on Kubernetes, **enhancing system efficiency by 80%.**
- Architected API Gateways for optimized communication channels using publisher-subscriber models (MQTT and Kafka), **reducing system latency by over 40%** and improving event processing speed.
- Optimized middleware with RESTful APIs, reducing processing time by 70% and minimizing critical operation downtime.
- Built a CI/CD pipeline using Jenkins, Ansible, and Docker, automating deployments and accelerating release cycles by 60%
- Configured and managed SSL/TLS certificates to secure client-server communications. .

Full Stack Developer, BabelCast Inc.   *Oct 2023-Jan 2024 | Remote, USA*
Tech Stack: Python, Flask, React, Node, GCP, REST, Docker, Kubernetes
Project Description: Worked as a founding engineer for the development of a webapp for a entertainment-gaming startup, enabling users to transpose their voice into thousands of voice models, including celebrities and custom models. The app supported real-time voice conversion during calls and allowed users to create, share, and collaborate on voice models.

- Led the development of Python and Flask backend, scaling to handle **100K+ concurrent users**, deployed using Docker and Kubernetes clusters on GCP.
- Incorporated over 20,000 voice models, integrated with GraphQL schema, enhancing database interactions and reducing query response time by 50%. Utilized Redis for in-memory cache.
- Led OAuth integration for secure access and seamless model deployment.
- Orchestrated testing frameworks (load, stress, end-to-end tests) using Gatling, Locust and custom SocketIO cases.
- Collaborated with UI/UX for front-end and back-end integration, boosting user engagement by 30%.

Graduate Research Assistant, UNC Charlotte   *Mar 2023-Oct 2023 | Charlotte, NC*
Tech Stack: Python, SQL, React, TensorFlow, Machine Learning models
<u>Project Description</u>: *Collaborated with a healthcare research group to collect and analyze biomedical data, such as blood pressure, heart rate, pulse, and brain activity, from various VR-simulated environments. The goal was to develop a machine learning model capable of predicting anxiety under different conditions, with applications aimed at supporting individuals with disabilities.*
- Created ML backend in Python to analyze physiological data, using Logistic Regression and K-Nearest Clustering **achieving 80% accuracy.**
- Developed React based dashboard , supporting visualizations of data, supporting manipulation of current and historical data.

Systems Engineer, Equifax Inc. via Tata Consultancy Services   *May 2021-Aug 2022 | Remote, India*
Tech Stack: Java, SpringBoot, Maven, GCP, Kubernetes, SQL, Grafana
Project Description: Worked on backend systems for Equifax's internal tools to monitor activities and manage data transactions. The project involved optimizing on-premise infrastructure and leading the cloud migration, including traffic redirection and safe decommissioning of legacy systems. Additionally, developed API endpoints to enhance tool functionality, ensuring scalability and future readiness.
- Engineered microservices for the Equifax UK system using SpringBoot, enhancing the UI and application features, resulting in a 150% boost in user satisfaction scores.
- Led the migration of legacy systems to GCP, architecting Kubernetes clusters and configuring Grafana for monitoring, achieving 200% improvement in uptime and reliability.
- Implemented CI/CD practices using Jenkins and ServiceNow for microservice deployments, achieving a 95% release success.
- Conducted code quality checks and vulnerability management using Nexus Lifecycle and SonarQube.

PROJECTS

Large Language Model (LLM) based Chatbot in Python
Created Chatbot trained on personal resume using Retrieval-Augmented Generation (RAG) integrated with Django based web-app, creating REST endpoints, with React, hosted on DigitalOcean.

Face Recognition Attendance System
Developed a facial recognition system using a Siamese Neural Network and FaceNet, where images of individuals are processed for facial recognition, enabling automated attendance logging. The system efficiently compares new faces with a pre-existing database without retraining the entire model, offering quick and accurate attendance updates.

PUBLICATION
Recommendation Systems based on Collaborative Filtering using Autoencoders: Issues and Opportunities, published in Recent Innovations in Computing, Springer. DOI: https://doi.org/10.1007/978-981-15-8297-4_32.

ACTIVITES
- Indian Institute of Technology (IIT) & Association for Computing Machinery (ACM): Awarded 1st prize for Project Poster presentation for Recommendation System using Autoencoders for movie recommendation.
- Google: Volunteered in Crowdsource Campaign for regional (Gujarati) language.

EDUCATION
University of North Carolina at Charlotte, USA | *Masters in Computer Science*   Aug 2022-May 2024
Nirma University, India | *Masters of Computer Application*   Aug 2019-May 2021
Ahmedabad University, India | *Bachelors of Computer Application*   Aug 2016-May 2019