Naman Shrimali

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Summary

Software Development Engineer at AWS specializing in building high-performance, highly available distributed systems. Proven track record of driving large-scale improvements in system efficiency and durability through innovations in load balancing and replication, while actively mentoring engineers and raising the bar on design and operational excellence.

Technical Skills

Languages	:	Java, Python, TypeScript, JavaScript (ES6), Dart, Ruby, HTML, CSS
Frameworks	:	Angular, ReactJS, Flutter, Node.js, Spring Framework
Databases	:	RDBMS (PostgreSQL, DB2, MySQL, MariaDB), NoSQL (MongoDB, HBASE, DynamoDB)
Tools	:	REST, GraphQL, Git, Docker, Kafka, RabbitMQ, Heroku, Jenkins, Maven, NPM, Tomcat/Nginx, Swagger

Professional Experience

Software Development Engineer II, Amazon Web Services, Seattle, WA Feb 2023 – Present

Worked as distributed systems engineer at Amazon Kinesis Data Streams (KDS), a serverless and scalable streaming data service

- Eliminated **100%** durability-related production incidents by designing, implementing and deploying a fail-safe in KDS' chain replication system to terminate the head node when it becomes the only surviving replica, preventing unrecoverable acknowledgments.
- Designed and integrated a quarantining mechanism into KDS' 3-node chain replication, enabling consensus-based eviction of unhealthy nodes. This improved system availability and resilience during deployments, patching, gray failures, and AZ outages.
- Improved system availability to **99.995%** and achieved **$1M+ in annual EC2 cost savings** by implementing the First Fit Decreasing bin packing algorithm to balance Transactions Per Second (TPS) across hosts. This reduced TPS standard deviation from **3000 to 299**, improved **p90 CPU utilization**, and enabled upto 60% reduction in fleet size.
- Built a Python-based MCP server for KDS operational tools, enabling plain-language prompts and simplifying access to a complex suite of internal tools without requiring detailed usage knowledge.
- Designed and implemented extensible load balancer architecture using **abstract factory pattern**, enabling seamless integration of new algorithms and improving system resilience during AZ failures
- Developed comprehensive testing framework for load balancer, including 24-hour production traffic simulation, resulting in successful deployment with zero incidents

Full Stack Developer Intern, Credible Labs, Durham, NC May 2022 – Aug 2022

Credible's online marketplace offers consumers to compare and refinance loans, mortgages, and other financial products from lenders.

- Reduced lender onboarding time to 7 days by streamlining **rails** codebase with **design patterns** and simple yaml configurations.
- Reduced total request number needed to retrieve data by **3%** by migrating microservices from **REST** to **GraphQL**.
- Introduced UI consistency by creating a custom **ReactJS** theming component which conditionally generated CSS variables to be read by all components, eliminating the need to create a new stylesheet or class designation for every theme.

Part Time Research Assistant, North Carolina State University, Raleigh, NC Jan 2022 – Dec 2022

Assisting research focused on improving Peer Assessment System - Expertiza (Open Source), while officially maintaining the system.

- Transformed peer reviewing by transitioning from generalized to Role-Based Reviewing, allowing role-specific peer evaluation.
- Boosted performance by **14%** & modernized an 8-year-old system by **migrating to Rails 6, Ruby 3** with no functionality affected.
- Improved test coverage by **29%** and code quality by **34%** by progressively refactoring and **mentoring 32 open-source contributors**.

Full Stack Developer, IBM India Pvt Ltd, Hyderabad, India Nov 2019 – Jul 2021

Created "Schedule and Save" feature for Albertsons (US) and worked for "Cards and Payments" feature for Westpac (AU)

- Built reusable components on **Angular** and **REST largescale Microservices** on **Spring Reactive** for async order transactions
- Ensured **Test-Driven Development (TDD)** with 90%+ test coverage by developing automated unit, component and integration testing framework built on **JUnit5**, **Mockito**, **MockWebServer** and **SonarQube**, maintained technical documentation as well.
- Designed and implemented **automated error handling and retry mechanism** on transient system failures, achieving **95% service availability** and curbed the service error rate to less than 2%.
- Achieved **13% reduction** in service response time by introducing cache replication and persistence with **EHCache and Redis**.

Personal Projects

MerryMakin Apr 2025 – Present

- MerryMakin is an app that lets you create and share fun, modern invites for any occasion. You can customize the design, send updates, and share photos with your community. Built with Flutter, Dart, Spring Reactive, MongoDB, dockerized and deployed on AWS EC2.

Leetrecur Feb 2022

- A Chrome Extension (5 stars, 650+ active users) that provides automated tracking for LeetCode submissions and schedules revision based on user's proficiency. Built with ReactJS, TypeScript, jQuery.

Spryly Jun 2021 – Jul 2021

- Developed an **adaptive** and **responsive** open-source work management web-app on **Angular**, **NPM Packages**, **Redux**, with live Kanban board for team collaboration using **Web sockets**.
- Built **Spring Boot, NodeJS** microservices, used **RabbitMQ** for asynchronous messaging, **PostgreSQL, DynamoDB** for databases.
- Secured with **Spring Security, Google OAuth2**, and **JWT** integrated on **Spring API Gateway**, load balanced with **Netflix Ribbon**.
- Containerized services using **Docker**, deployed application on **AWS EC2**, automating deployment process with **Gitlab CI/CD**.

Education

Master of Science in Computer Science Aug 2021 – Dec 2022
North Carolina State University, Raliegh, NC *GPA: 3.93*

Bachelor of Technology in Computer Science Aug 2015 – May 2019
Rajasthan Technical University, Jaipur, India

Certifications

- Microsoft Certified: Azure Fundamentals (Badge)
- Deep Learning Specialization - deeplearning.ai (Badge)