Nikhil Routh

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EDUCATION

Virginia Tech, *Masters in Computer Science and Applications*, Blacksburg, VA **Jan 2023 - Dec 2024**
Relevant coursework: Algorithms, Cloud Software Engineering, Data Structures, DBMS, Big Data Engineering, Machine Learning
VNR VJIET, *Bachelors in Electronics & Communication Engineering*, Hyderabad, India **Sep 2013 - May 2017**

TECHNICAL SKILLS

Programming	Java, Python, C, JavaScript, Kotlin, Scala, Gosu, R, SQL, Bash
API & Integrations	RESTful APIs, Spring Security (OAuth2, JWT), Postman, ReadyAPI, Swagger/OpenAPI, API Gateway
Frameworks	Spring Boot, Hibernate, Spring MVC, React.js, Redux, Node.js, Express, J2EE, Kafka, Spring Security
Cloud & Devops	AWS EC2, AWS Lambda, Jenkins, GitHub Actions, Docker, Kubernetes, CI/CD Pipelines, YAML
Databases	Oracle, MySQL, PostgreSQL, SQLite, MongoDB, Spring Data JPA, Hibernate
Tools	Git, Bitbucket, Maven, Gradle, SourceTree, Jira, Confluence
Testing	JUnit, TestNG, Mockito, Selenium WebDriver, Postman, ReadyAPI
IDEs	IntelliJ IDEA, Eclipse, VSCode, Android Studio, Guidewire Studio, R Studio, Jupyter Notebook
Methodologies	Agile (Scrum, Sprint Planning, Kanban), SDLC, System Design, Microservices Architecture, Distributed Systems

WORK EXPERIENCE

Full Stack Engineer at One Community Global, San Gabriel, CA (Remote) **Mar 2025 - Present**

- **Migrated 40+ legacy components** to modular CSS architecture, reducing style conflicts **by 75%**.
- Scoped and built reusable frontend/backend components, increasing modularity, reducing feature **delivery time by 30%**
- Performed **debugging, testing, documentation and CI/CD deployment** using **GitHub Actions, Swagger and Docker** containers.
- Built and deployed scalable backend services (**Node.js, Python**) with **99.8% uptime,** integrating distributed architecture for cloud-edge workflows; Collaborated with distributed teams, participated in weekly Agile stand-ups and sprint planning.

Graduate Assistant at ARC Lab, Blacksburg, VA **May 2024 - Dec 2024**

- Developed **"ShoreSync"**, for an NSF-funded project at VIMS to support citizen-driven GIS shoreline management.
- Improved shoreline data collection efficiency by **50x** through user friendly interface design and GPS-tagged data/image inputs.
- Applied agile methodologies to reduce data collection costs by **3x** while ensuring effective validation of field inputs.

Senior Software Developer at Capgemini Technology Services **Sep 2017 - Dec 2022**

- **Application Development:** Developed and enhanced scalable Java-based applications using **Spring Boot, Hibernate, and Microservices**, ensuring high availability and maintainability.
- Implemented **microservices architecture** for policy, claims, billing, and payments, enhancing modularity & independent scalability.
- Designed and deployed secure RESTful APIs using Spring Boot and Spring Security with **Spring Security, OAuth2 and JWT;** implemented API versioning and governed endpoint structures.
- Engineered memory-efficient real-time engines using **Java concurrency and multithreading,** optimizing data throughput and latency **by 40%.**
- Engineered SOAP and RESTful APIs integrating Policy Center with external systems, reducing manual intervention by **30%**.
- Implemented **Eureka Server** for service discovery and Spring Cloud Gateway for API routing; applied **Circuit Breaker patterns** to achieve 99.95% service uptime under failover conditions.
- Developed and tuned **SQL Server stored procedures and views**, improving query performance on large datasets by **40%**.
- **Performance Optimization:** Optimized **JVM** performance through fine-tuned garbage collection and memory management, improving efficiency in high-load environments.
- Developed data models and entities using **Hibernate POJOs and JPA persistence layer** for efficient database transactions.
- **Workflow Improvements:** Optimized claims workflow engine, enhancing processing speeds and enabling dynamic claim prioritization based on policyholder data and predefined business rules.
- **Full-Stack Development:** Implemented full-stack solutions by developing a **React.js-based customer portal** with a Spring Boot backend, increasing customer engagement by **25%**.
- **Testing & Automation:** Developed an automation testing framework using Java with **Selenium WebDriver, JUnit, and TestNG**, reducing regression testing time by **50%** and ensuring **85%** functional test coverage.
- Led API testing using Swagger/OpenAPI, and ReadyAPI; monitored and tuned API throughput and latency under production loads.
- **CI/CD & DevOps:** Established CI/CD pipelines using **Jenkins, Docker, Kubernetes,** and **Bitbucket**, automating over **150** builds and test processes weekly, significantly improving deployment speed and reliability.
- **Code Quality & Collaboration:** Identified code smells and resolved technical debt swiftly, improving code quality and maintainability while managing tasks through **Jira**.
- Collaborated with cross-functional teams to deliver end-to-end solutions from requirements to deployment.
- Mentored a team of 6, conducting code reviews to maintain quality and promote reusable, modular, clean coding practices.

PROJECTS

PerfPort at Virginia Tech, 2023 *Software as a Service , J2EE, PrimeFaces, Wildfly, MySQL, API, AWS EC2, MVC*

- Developed a **cloud-based SaaS Jakarta/Java EE** software application hosted on AWS using the **MVC framework** design pattern to facilitate investment performance analysis and benchmarking against custom portfolios.
- Implemented role-based access control (RBAC) to safeguard data integrity while enabling users to generate custom performance and attribution reports on 5+ years of historical market data within 10 seconds.