

# PRANAV AGRAWAL

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## SUMMARY

Software Development Engineer with 4 years of experience in Java, web services, SQL, and testing. Specializing in object-oriented programming, high-performance APIs, security best practices, and microservices. Skilled in efficiently collaborating with cross-functional teams to resolve production issues.

## PROFESSIONAL EXPERIENCE

**Graduate Research Assistant** | CEC - George Mason University | Fairfax, VA **May 2023 – May 2024**

Security of Cross-chain Bridges

- Developed Python scripts to concurrently scrape the transaction data from over 8 cryptocurrency blockchain bridges, resulting in a 30% improvement in data collection speed and resource utilization.
- Optimized API requests in parallel batches asynchronously for efficient data extraction, including logs and ERC20 token details.
- Automated transaction data upload to MongoDB (NoSQL) for improved accessibility and analysis of monthly transaction data to identify security vulnerabilities in cross-chain operations.

**Application Development Senior Analyst** | Accenture | Bangalore, India **May 2021 - July 2022**

EHP Application | Elevance Health

- Developed Java based microservices for tracking program, activity, and milestone components in insurance applications, enabling seamless integration with over 20 other microservices and internal applications, improving interface reusability.
- Enhanced batch job average processing time by 29% through optimized processing of recent database changes and implementation of automated job scheduling using Cron expressions.
- Implemented Spring transaction management across APIs to ensure consistent Database transactions.
- Achieved 90% code coverage with unit tests using Cobertura, addressing vulnerabilities identified by SonarQube and CheckMarx.
- Automated microservices deployment and server execution with shell scripts, integrating them into Jenkins CI/CD pipeline.

**Project Engineer** | Wipro Limited | Bangalore, India **Nov 2018 - May 2021**

AWSD Migration from Fuse 6.2 to Fuse 7.6 | Aviva Health

- Developed Java APIs for comprehensive healthcare insurance process management, enhancing transaction scalability by 25% under high loads through concurrency control, optimized databases and connection pooling.
- Implemented AWS KMS and Vault for cloud data encryption, ensuring secure storage of sensitive information.
- Executed code migration to an updated framework, enhancing dependencies, restructuring libraries, and modifying over 10,000 lines of code, improving system response time by 20%.
- Updated Apache Camel Fuse enterprise service bus routes and deployed OSGi bundle on Apache Karaf to test applications.
- Automated log retrieval system to efficiently route statistics and events logs to Splunk for improved logging capabilities.

## TECHNICAL PROJECT EXPERIENCE

**Student Survey Application**

- Developed Java based microservices applications using Spring Boot, RESTful Web Services, and JPA along with Amazon Relational Database Service (RDS) to implement CRUD operation to manage student survey data, and a user-friendly interface using Angular.
- Containerized the application using Docker and deployed to container orchestration platform Kubernetes, established using Rancher.
- Established a CI/CD pipeline that includes a Git source code repository at GitHub, and Jenkins for automated build and deployment of the application on Kubernetes.

**Bank Management System**

- Developed a robust banking application using Python and Oracle 11g, certified by Infosys Limited, to manage accounts and debt operations efficiently.
- Implemented key features including account creation, address updates, deposits, withdrawals, statements, transfers, and loan management with a focus on user and admin functionalities.

## EDUCATION

**Master of Science in Computer Science** | George Mason University | Fairfax, Virginia | GPA: 3.8 | **May 2024**

## TECHNICAL SKILLS

**Programming Languages, Tools, & Frameworks:** Java, Python, JavaScript, Bash, Maven, Jenkins, Git, Docker, Kubernetes, Rancher, Spring framework, Spring Boot, Angular

**Web Technologies:** HTML, CSS, XML, JSON

**Web Services:** SOAP API, REST API

**Database Management:** SQL Server, MySQL, Oracle 11g, MongoDB

**Additional Skills:** Agile, JIRA, AWS, GCP, CI/CD, Linux

## CERTIFICATION

AWS Certified Solutions Architect - Associate