PRANAV AGRAWAL | SOFTWARE ENGINEER

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EDUCATION

Master of Science in Computer Science | George Mason University | Fairfax, Virginia | **Expected May 2024**
Bachelor of Technology in Computer Science & Engineering | Graphic Era University | Dehradun, India | **May 2018**

TECHNICAL SKILLS

Programming Languages, Tools, & Frameworks: Java, Python, C, C++, JavaScript, Shell Scripting, Maven, Jenkins, Git, BitBucket, SVN, Log4j, Spring, Spring Boot, AngularJS, Apache Spark, docker, Kubernates, Kafka
Web Technologies: HTML, CSS, XML, JSON, AJAX
Web Services: SOAP API, REST API, Postman, SoapUI
Database Management: SQL Server, MySQL, Oracle 11g, bigQuery, MongoDB
Additional Skills: Red Hat Fuse, Agile, Jira, AWS, GCP, AI/ML, CI/CD | **Certification:** AWS Certified Solutions Architect Associate

PROFESSIONAL EXPERIENCE

Graduate Research Assistant | College of Engineering & Computing, George Mason University | Fairfax, Virginia **May 2023 - Present**
Security of Cross - chain Bridges

- Developed Python scripts to query large transactions for a specific stablecoin using Amazon Redshift, enabling detailed analysis of transaction patterns.
- Segregated and analyzed monthly transactions data for critical insights, aiding in the identification of potential security vulnerabilities in cross-chain operations.
- Automated the upload process of transaction data to Amazon S3 to ensure data accessibility for further analysis.
- Developed and maintained the automation of cloud-based resources using Terraform to ensure consistent and secure deployment of infrastructure components.

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

- Developed microservices to track program, activity and milestone components within insurance applications and made their APIs available for integration with other microservices and internal applications, thereby increasing interface reusability amongst applications within the organization.
- Improved batch job efficiency by 29% by processing only recent database changes, and automated execution with Cron expressions to minimize manual effort.
- Integrated Spring transaction management across APIs, to enhance DB transaction consistency.
- Increased code coverage to 90% with unit tests, measured by Cobertura, and fixed security and data leakage vulnerabilities flagged by SonarQube and CheckMarx.
- Automated microservices deployment and execution on servers with shell scripts, then integrated these into Jenkins CI/CD to minimize manual effort.

Project Engineer | Wipro Limited | Bangalore, India **Nov 2018 - May 2021**
AWSD Migration from Fuse 6.2 to Fuse 7.6 | Aviva Health

- Developed APIs for comprehensive management of healthcare insurance processes, including quotation and application, onboarding, claims processing, and document management, to enhance efficiency in handling healthcare and insurance policy-related transactions.
- Integrated AWS KMS and Vault for comprehensive encryption of data in the cloud, ensuring robust security for storage and management of sensitive information.
- Migrated code to updated framework by upgrading dependencies ,restructuring code and libraries, and making the required code changes.
- Updated Apache Camel Fuse enterprise service bus routes and deployed OSGi bundle on Apache Karaf to deploy and test applications.
- Automated log retrieval system for statistics and event routing, designed to efficiently forward logs to Splunk for enhanced logging.

TECHNICAL PROJECT EXPERIENCE

Bank Management System

- Developed a RESTful web service for Student Survey Application using Spring Boot, integrating JPA for database interactions, and a user-friendly interface using Angular.
- Ensured efficient data handling and scalability for survey submission, retrieval, and deletion with three-tier architecture.
- Containerized with Docker for deployment on AWS EC2, achieving high availability and performance.

Automated Timetable Generator using Genetic Algorithm

- Implemented Java code & algorithms resembling natural selection to optimize schedules by evaluating, selecting, and evolving solutions.
- Designed to handle complex constraints, evolving toward an optimal timetable through crossover, mutation, and fitness-based selection.