

# RUPAL JAIN

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## EDUCATION

**Master of Science in Computer Science** | The University of Arizona, Tucson, AZ, USA | GPA: 3.63 (Aug 2022 - May 2024)

- **Specialization:** Software Engineering, Full Stack, Data Structures, Algorithms, Object-Oriented, Cloud computing

**Bachelor of Technology in Computer Science Engineering** | GGSIPU, Delhi, India | Grade: 8.64 (Aug 2015 - May 2019)

## SKILLS

**Languages:** Python, C++, Java, Swift, C | **Web Development:** JavaScript, Node.js, R, HTML, CSS, D3.js, jQuery, React

**Databases:** MySQL, Oracle PL/SQL, NoSQL, Data Migrations, PostgreSQL | **Tools:** XCode, VS Code, IntelliJ, PyCharm

**Cloud services:** AWS (Lambda, CloudWatch, RDS, EC2), GCP | **APIs/Frameworks:** Spring Boot, RESTful API, gRPC, Flask, SwiftUI

**DevOps & Containerization:** Docker, Kubernetes, CI/CD, Jenkins, Git, GitLab | **SaaS** | **OS:** Linux, Windows, iOS | **Agile**

## WORK EXPERIENCE

**Software Developer Intern** | Resilient Software Security | Remote (Jun 2024 - Present)

- Designed telemetry dashboard integrated with CloudWatch for visualizing real-time application usage patterns and users footfall
- Created RESTful APIs using Steampipe to link Google Cloud, Azure and Slack into company's platform for seamless user connectivity (May 2023 - Aug 2023)
- Developed a scalable algorithm to generate software security analysis reports deployed on AWS Lambda using Docker container images reducing manual processing time from 7 days to under 1 minute
- **Technologies:** JavaScript, AWS (Lambda, S3, CloudWatch RUM, EC2), React, Docker, REST API, GCP (Google API)

**Software Developer** | Tata Consultancy Services | Mumbai, India (July 2019 - July 2022)

- Engineered a batch processing system using Spring Batch to automate large-scale data imports and exports, leveraging partitioning and chunk-oriented processing to improve processing speed for millions of records by **60%**
- Integrated real-time application monitoring using Spring Boot Actuator and Grafana for performance tracking and alerting
- Revamped the legacy web interface by transitioning from server-side rendering to a React.js-based frontend with backend implemented using Spring Boot via REST APIs. Achieved a **30%** reduction in load latency and a 25% increase in user retention
- Applied indexing strategies and query tuning reducing execution time of PL/SQL operations by **50%** resulting in faster data retrieval
- Optimized database interactions in Spring Boot applications by leveraging JPA and Hibernate caching reducing query execution time by 30% and improving system throughput for high-traffic endpoints
- Migrated client's backend systems from SAP ECC to S/4 HANA achieving **60%** faster data processing speed and real-time analytics
- **Technologies:** Java (Development & Support), Spring boot, REST API, Oracle PL/SQL, GitLab, CI/CD, Jenkins pipelines

## PROJECTS

**Weather Forecast – Swift, iOS, SwiftUI, Lottie-ios, XCode, MVVM Design** [[GitHub](#)] (Nov 2024)

- Designed a weather app with MVVM design using WeatherBit API for real-time updates and 3-day forecasts for 376,000 cities. Crafted a sleek UI using SwiftUI with state management. Leveraged Codable protocol for JSON parsing. Simulated the app on iPhone 16
- Future enhancement includes interactive maps using MapKit, live location using Core Location API, pin favorite city, alert notification

**Distributed Trading System – Java, Spring Boot, gRPC, MySQL, MVC Design** [[GitHub](#)] (Oct 2024)

- Built a microservices-driven stock trading platform. Used Java Concurrency API thread pools & atomic synchronization for low latency, data consistency and safe concurrency. Integrated gRPC and SSE for live processing and performance monitoring
- Integrated MySQL with caching to handle 10,000+ concurrent transactions, ensuring scalability and reliability for critical operations

**EdiLite Text Editor – C++, Linux, Ubuntu** [[GitHub](#)] (Oct 2024)

- Developed a text editor featuring efficient file handling, search, navigation, status bar, line numbers, and syntax highlighting
- Focused on terminal input handling, raw mode processing and efficient file operations like creation, editing and saving to disk

**Badminton Tournament Management System for UA – Python, Flask, AWS EC2, RDS** [[GitHub](#)] (Apr 2023)

- Engineered application using Flask for handling registration, match assignments. Integrated PostgreSQL with Amazon RDS on EC2
- Conducted unit and integration testing with Pytest. Followed complete Software Development Lifecycle (SDLC) with detailed ADR

**Data Visualization Projects – Python, D3.js, JavaScript** [[GitHub](#), [Demo](#)][[GitHub](#)] (Apr 2023)

- Designed visualization for complex datasets using treemaps, volume rendering (VTK library) and vector field visualization in D3.js
- Built Graphical user Interface (GUI) using PyQt5, CV2 for image compression, QtGraph, matplotlib for plots, Pandas lib in Python

**AI Detecting Hate Speech Words in Tweets – Neural Network with Lucene (Java, Python)** [[GitHub](#)] (Apr 2023)

- Fine-tuned BERTweet model and optimized hyperparameters for diverse datasets. Improved f1-score compared to the original model
- Used NumPy, and Pandas for data processing. Pytorch for GPU config, Fetched tweets using Twitter4J API with Lexicon approach

**Google Cloud Computing Foundations Certificate** [[Certificate](#)] (Aug 2024)

**Volunteering:** Girls Who Code | Member@RTC | **Teaching Assistantship:** Software Engineering, Cloud Computing, Web Development