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 Development, Data Structures, Algorithms, Object-Oriented Programming

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

SKILLS

Languages: C++, Python, C, Java; Scripting **| Library/Frameworks:** Flask, Django, jQuery, Express.js, SQLAlchemy
Web Development: JavaScript, Node.js, R, HTML/CSS, Familiar: React.js, MERN **| Cloud services:** AWS S3, Lambda, GCP
Databases: RDBMS, NoSQL, CRUD; MySQL, Oracle PL/SQL, PostgreSQL, MongoDB, Informatica Power BI, OLAP, Query Planning
DevOps: CI/CD pipeline, GIT, Docker, Jenkins, Kubernetes, GitLab, Jira **| APIs/Tools:** RESTful API, AWS API Gateway; ETL
OS: Linux Ubuntu, Windows, iOS **| Testing:** Pytest, Code coverage, Code analysis **| Agile:** Scrum, Sprint Planning
Interpersonal Skills: Adaptive, Self-starter, Problem Solving, Troubleshooting, Debugging, Analytical, Communication skills, Team Player

EXPERIENCE

Software Developer Intern | Resilient Software Security | Phoenix, AZ, USA (May 2023 - Aug 2023)

- Automation of client's software security analysis report generation, reducing manual processing time from a week to a few seconds
- Deployed a report generation algorithm on AWS Lambda function using Docker container images for seamless deployment
- Employed GitHub Actions for Cloud Deployment. Documented comprehensive architectural decisions report
- **Technologies: AWS ECR, S3, CloudWatch RUM, EC2, GCP (Google API), JavaScript, Docker, JotForm API, Webhooks**

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

- Optimized extensive PL/SQL queries, achieving **50%** reduction in run-time cost. Conducted GDPR/CCPA Audit for the project
- Conducted database system migration from SAP ECC to SAP S/4 HANA version in SQL for faster processing, real-time analytics
- Revamped legacy code mapping in Informatica, migrated technical metadata to stored procedures, adhering to Agile practices
- **Technologies: Java (Development & Support), GitLab, CI/CD, Jenkins pipelines, code review, Oracle PL/SQL**

Software Developer Intern | Utopian Dreams Pvt. | New Delhi, India (June 2018 - Aug 2018)

- Added CSV Export/Import feature in FinTech platform, using Node, XLSX library, improved productivity of users by **50%**
- Added Maps for location and statistical charts, reducing growth analysis time by 60%, aiding in faster, more informed decision-making
- **Technologies: Node.js, JavaScript, Google APIs**, Highcharts API

ACADEMIC PROJECTS

Badminton Tournament Management System for University [GitHub] (Apr 2023)

- Designed Public/Admin/Player front-end view Dashboard using HTML/CSS to assist in player registration, admin controls, match assignment. Developed model controller in Flask (python). Linked server in EC2 instance with Amazon RDS using PostgreSQL
- Used Pytest for Unit and Integration Software Testing. Followed Scrum and Agile practices throughout the Software Development Lifecycle (SDLC). Properly documented Progress/Final Architecture Report at every stage of product development

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

- Fine-tuned BERTweet model and optimized hyperparameters for diverse datasets using Python. Measured performance using machine learning evaluation metrics. 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

Artificial Intelligence Project – Breakout Game [GitHub] (Apr 2024)

- Trained AI agent with Q-Learning and Approximation in a custom gym environment to achieve higher rewards and improve gameplay efficiency, analyzed learning rates vs. Epsilon vs. discount factor to evaluate performance, visualized learning curve using matplotlib

Data Visualization Projects [GitHub] [GitHub] (Apr 2023)

- Represented complex datasets using treemaps, volume rendering (VTK library), and vector field visualization using D3.js in JavaScript
- Built Graphical user Interface (GUI) using PyQT5, CV2 for image compression, QtGraph, matplotlib for plots, Pandas lib in Python

Artificial Intelligence Chatbot – Student Support System [GitHub] (Apr 2019)

- Responsive webpage using jQuery, JavaScript, bot trained & deployed in Dialogflow, GCP with Firebase DB with server in Node.js

C++ Game Projects [GitHub] [GitHub] (Dec 2017)

- Rolling Dice Board Game: A Multiplayer game with interactive prompts in each turn. Used graphics library
- Rubik Cube Solver: Solve the cube from any scrambled state, the user can also input moves to solve. Used vectors

Presented existing ML paper on "Contextual Combinatorial Cascading Bandits" [Presentation] (Nov 2023)

Volunteered for Girls Who Code: Teaching Python programming language to middle-school girls (Aug 2023 - May 2024)

Graduate Teaching Assistantship: Software Engineering, Cloud Computing, Web Development (Aug 2023 - May 2024)