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 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++, C, Python, Java; Scripting **| Lib/Framework:** jQuery, Express.js, Flask

Web Development: JavaScript, Node.js, R, HTML/CSS, Familiar: React.js, MERN **| Cloud services:** AWS S3, GCP

Databases: RDMBS, No-SQL, CRUD; MySQL, Oracle PL/SQL, PostgreSQL, MongoDB, Firebase

APIs/Tools: RESTful API, AWS API Gateway, Socket.IO Server API; Agile, CI/CD pipeline; GIT, GitLab, Jira, Docker, Jenkins

Interpersonal Skills: Adaptive, Self-starter, Problem Solving, Analytical, Eagerness, Debugging, Written & Verbal Communication skills

EXPERIENCE

Software Developer Intern | Resilient Software Security | Phoenix, AZ, USA   **May 2023 - Aug 2023**
- Automated client's software security analysis report generation reducing manual processing time from a week to few seconds
- Deployed report generation algorithm on AWS Lambda function using Docker container images for seamless deployment
- Webhook Integrated JotForm API, AWS (ECR for data storage, Secret manager), GCP (Google API for email) using JavaScript (JS)
- Employed GitHub Actions for Cloud Deployment. Documented complete architectural decisions report. Used Asana for task tracking

Graduate Teaching Assistantship | CSC/ECE dept. at UofA | Tucson, AZ, USA   **Aug 2023 - May 2024**
- Managing and grading programming assignments for Software Engineering, Cloud Computing, Web Development & IOT courses

Software Developer | Tata Consultancy Services | Mumbai, India   **July 2019 - July 2022**
- Involved in Development, support of production systems, code review & CI/CD (in Jenkins) of TCS career portal using Maven, Java
- Optimized extensive PL/SQL queries, achieving 50% reduction in run-time cost. Conducted GDPR/CCPA Audit for the project
- Worked in Client's backend database team, conducted database system migration from SAP ECC to SAP S/4 HANA version in SQL
- Revamped legacy code mapping in Informatica, migrated technical metadata to stored procedures, adhering to Agile practices(Kanban)

Software Developer Intern | Utopian Dreams Pvt. | New Delhi, India   **June 2018 - Aug 2018**
- Added new feature of CSV Export/Import in FinTech platform, using Node-xlsx, XLSX JavaScript library with PostgreSQL database
- Added location functionality using Google Maps API and statistical charts using Highcharts API for nice visual data interpretation

PROJECTS AND PUBLICATION

Software for UofA Badminton Tournament Management System [GitHub Link]   **Apr 2023**
- Designed and coded Public/Admin/Player front-end view Dashboard using HTML/CSS. Developed model controller in Flask (python). Linked server in EC2 instance with Amazon RDS using PostgreSQL. Used Pytest for Unit and Integration Software Testing
- Managed project using Jira, Confluence & GitHub. Collected customer feedback in each Sprint Iteration. Followed Scrum, Agile practices throughout the SDLC. Properly documented Progress/Final Architecture Report at every stage of product development

Artificial Intelligence Project – Breakout Game [GitHub Link]   **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, visualize learning curve using matplotlib

AI Detecting Hate Speech words in Tweets – Neural Network with Lucene in Java [GitHub Link]   **Apr 2023**
- Fine-tuned BERTweet model and optimized hyperparameters for diverse datasets using Python. measured performance using machine learning evaluation metric. Improved f1-score compared to original model
- Used NumPy, Pandas for data processing. Pytorch for GPU config Fetched tweets using Twitter4J API with Lexicon approach

Data Visualization Projects [GitHub Link] [GitHub Link]   **Apr 2023**
- Built Graphical user Interface (GUI) using PyQT5, CV2 for image compression, QtGraph, matplotlib for plots, Pandas lib in Python
- Represented complex dataset using treemaps, volume rendering (VTK library), and vector field visualization using d3.js in JavaScript

Artificial Intelligence Chatbot – Student Support System [GitHub Link]   **Apr 2019**
- Responsive webpage using jQuery, JavaScript. bot trained & deployed in Dialogflow, GCP with Firebase DB. created server in Node.js

C++ Projects [GitHub Link] [GitHub Link]   **Dec 2017**
- Rolling Dice Board Game: A Multiplayer game with interactive prompts in each turn. Used graphics library
- Rubik Cube Solver: Solve cube from any scrambled state, user can also input moves to solve. Used vectors

Presented existing ML paper on "Contextual Combinatorial Cascading Bandits" [Presentation Link]   **Nov 2023**

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