

# RUPAL JAIN

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Portfolio: <https://rupaljain97.github.io>

## 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 | **Library/Framework:** 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, Firebase

**DevOps:** CI/CD pipeline, GIT, Docker, Jenkins, Kubernetes, GitLab, Jira | **APIs/Tools:** RESTful API, AWS API Gateway; ETL, Xcode

**OS:** LINUX Ubuntu, Windows, iOS | **Testing:** Pytest, Code coverage, Code analysis | **Agile:** Scrum

**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 a 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, and 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 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

**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 datasets 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 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 Link](#)] **Nov 2023**

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