

# 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: 3.55 **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:** RDBMS, 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

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

**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

**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

**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

**Computer Security Project - Analysis of Cryptocurrency Exchanges** [[GitHub Link](#)] **Dec 2022**  
• Analyzed major security breaches of top 4 cryptocurrency exchange, used Cryptoguard to detect crypto vulnerabilities

**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**

**Published: “Importance of Machine Learning in the Growth of Twitter”, IJRASET, April 2019** [[Paper Link](#)] **Apr 2019**

**Volunteering for Girls Who Code:** Teaching Python programming language to middle-school girls **Aug 2023 - Present**