Vraj Rajpura

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EDUCATION

Master of Science - Computer & Information Sciences, *University of Washington, Seattle* **06/2026**
Data Structures and Algorithms, Data Science, Statistics, Database Management, Software Engineering, Machine learning.

Bachelor of Technology - Computer Science Engineering, *National Institute of Technology, Surat* 05/2024
Object-Oriented Programming (OOPs), Operating Systems, Computer Networking, Artificial Intelligence, Mathematics.

TECHNICAL SKILLS

Languages and Frameworks: C, C#, C++, Python, Java, HTML, CSS, JavaScript, Flask, Dot Net Core, API Designing.

Database Management & OSs: MySQL, Oracle SQL, MongoDB (beginner), SQLite, RDBMS, UNIX, Linux, Windows, MacOS.

Tools & Platforms: Jira, Bitbucket, SourceTree, Tableau, Snowflake, Figma, WordPress, Git & GitHub, Postman, Azure.

Relevant Skills: Full Stack Development, Front-end & Backend Development, RESTful API, JSON, Cloud Computing, CI/CD, Debugging, Unit Testing, Spring boot, Pandas, NumPy, TensorFlow, GenAI, Matplotlib, Agile development, Strong problem-solving, Azure DevOps, Automation, PostgreSQL, Version-Control systems, SDLC, Analytical Thinking, Scalable Systems, Open-Source, TypeScript, Kubernetes, Docker, Web Development, Scripting, Visual Studio, Logging.

WORK EXPERIENCE

Software Engineering Intern, *Expedia Group* [Splunk, AWS Lambda, Spinnaker, Aerosol, LLMs] 06/2025 – Present
- Collaborated with SREs to develop an observability assistant integrating **Python** microservices, **AWS Lambda functions**, and **Splunk API** to deliver real-time booking metrics directly in Slack, reducing incident investigation time by over 60%.
- Built automated pipelines with **Spinnaker** and **Aerosol** to deploy & scale monitoring workflows, enabling rapid anomaly detection in airline purchase flows thereby safeguarding millions in potential revenue during system disruptions.

Software Intern, *Musafir.com* – [C#, ASP.NET Core, MVC, Automation, Redis] 02/2024 – 06/2024
- Enhanced client expense tracking and reduced processing time by 15%, by developing modular features tailored to each client's travel and finance policies using **C#** and **.NET MVC architecture**.
- Automated report generation for 900+ clients to track travel expenses & emissions, reducing **turnaround time by 80%.**

Developer and co-founder, Emma *Coach* [OpenAI API, Replit, WA Business API, Stripe, Python] 01/2024 – 03/2024
- Engineered a WhatsApp AI therapist using **OpenAI's Assistants API**, **Replit hosting**, Flask and a multi-threaded architecture to enable 100+ simultaneous conversations while achieving response times under 1.5 seconds.
- Acquired 50+ customers across three countries through a free trial. Analyzed user behavior and launched features like time zone-based scheduling and daily check-ins, **boosting session length by 25%.**

Software Development Intern, *Barclays* [Java, Maven, Kafka, SQL, Spring, Automation testing] 05/ 2023 – 07/ 2023
- Automated a critical component in the Markets Technology division and financial systems using **Java, Maven**, and basic **Kafka**, saving 7 hours of the team weekly; Provided management a bird's-eye view of missing trades & transactions.
- Built and integrated **server monitoring** and **logging** tools to track server health and application failures, improving system reliability, enabling 30% faster resolution time within proprietary trading reconciliation systems.

RESEARCH AND PROJECTS

KeyTrack - Key Approval Software, *University of Washington, Housing & Food Services*
- Automated the key tracking process for 80+ stakeholders, reducing administrative overhead by 30% by developing a full stack WebApp using **Google Apps Script**, **JavaScript**, **TypeScript** and **HTML**.
- **Automation tested** and deployed a production-ready key approval system using Gemini 2.0 and browser-use automation, cutting approval errors by 70% and saving 30% in admin time across 80+ users.

Ragnificient, *Gen-AI Dynamic RAG Chat-bot for Boeing use-case*
- Built a dynamic RAG (Retrieval-Augmented Generation) prototype leveraging **open-source Meta Llama 3.3 & vector databases** to consolidate Boeing's internal documentation and deliver accurate, source-linked responses 10x faster.
- Enabled **multi-source retrieval** by integrating OneDrive, Google Drive, and web scraping capabilities; deployed the agent on **Streamlit Community Cloud** for affordable POCs & seamless internal access.

Sentiment Analyzer on Microsoft Azure, *Cloud project – Advised by Prof. Fawad Khan (Head of Product – Azure Labs)*
- Developed and deployed a scalable sentiment analyzer WebApp using **Azure ML Studio** and **Cognitive Services APIs**, leveraging GitHub Copilot to speed development by 40% while enabling real-time analysis with 92% accuracy.
- Configured **Azure Web App**s with auto-scaling and virtual network subnets for secure, cost-efficient deployments, achieving a 60% reduction in idle costs by dynamically rescaling IaaS resources based on peak traffic.

A Statistical Approach to Identifying Biased Comments Online, *Research Assistantship – Advised by Dr. Abdessamad Imine*
- Scraped textual data from Facebook and Reddit using **Selenium** and **BeautifulSoup** to train a custom model **Naive-Bayes** classifier that tags comments as positive, negative, or neutral in bias.
- Conducted literature reviews on **BERT's** effectiveness in **bias detection** and developed a system that flagged 500+ Reddit threads to alert moderators of emerging bias and potential echo chambers.