Rijul Bir Singh

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Education

University of Florida, Gainesville, USA   Aug 2024 – May 2026
Master of Science in Computer Science   **GPA: 3.61/4.0**

Relevant Coursework: Generative AI, Data Science, Distributed Operating Systems, Design Analysis & Algorithms

Delhi Technological University, Delhi, India   Aug 2017 – May 2021
Bachelor of Engineering in Software Engineering   **GPA: 3.5/4.0**

Relevant Coursework: Machine Learning, Database Management Systems, Computer Networks, Software Engineering

Skills & Certifications

Languages & Tools: SQL (advanced), Python, Java, Go, C++, JavaScript, Pandas, NumPy, Docker, Git

Data & Databases: ETL Pipelines, Data Modeling, Apache Airflow, PostgreSQL, MongoDB, Snowflake, Vector DBs (FAISS, ChromaDB)

AI & Analytics: RAG, LangChain, Hugging Face, OpenAI APIs, Power BI, Tableau, Model Fine-tuning

Frameworks & CMS: Django, Streamlit, FastAPI, React.js, Node.js, AEM

Certifications: Adobe Experience Manager Business Practitioner Professional, Cryptography I (Stanford), Data Analysis with Python (IBM)

Experience

Technical Consultant | Adobe   Apr 2023 – Jul 2024

- Developed and tested hotfixes for Adobe Experience Manager (AEM), resolving 10–15 critical issues per release cycle, including **thread leaks** and **Oak indexing failures;** analyzed thread and heap dumps to troubleshoot.
- Developed features using JCR and OSGi components for AEM's **Multi-Site Manager** and **translation tools**, improving experience for **1M+ users** with increased functionality.
- Reduced unresolved customer issues by **82%** through detailed bug validation, significantly boosting product reliability and user satisfaction.

Software Development Engineer | Optum, United Health Group   Jun 2021 – Apr 2023

- Designed and scheduled ETL workflows using **Apache Airflow**, automating the movement of structured claims and provider data into a centralized reporting DB, which improved data freshness and reduced pipeline **failures by 30%.**
- Built and maintained **Power BI dashboards** to track **provider performance** and **patient engagement metrics**, reducing **manual reporting effort** by **35%** and improving **turnaround time** from **1 day to 4 hours**.
- Created P&L reports and dashboards using **PowerBI** and **Cognos**, translating financial metrics into actionable insights.

Projects

WoRMS Marine Species Agent (ACIS Lab) | *iChatBio Agent SDK, OpenAI, WoRMS API, Pydantic*   [Source Code] | 2025

- Built an intelligent conversational agent using the **iChatBio Agent SDK** from UF's ACIS Lab to provide natural language access to the WoRMS database and iDigBio biodiversity records containing 240,000+ validated marine taxa.
- ML pipeline that extracts scientific names from natural language queries using LLM parsing, executes parallel API calls across 6 endpoints, and validates through **Pydantic data models**, achieving **structured responses in under 2 seconds**.

CampusCupid – College Dating App | *Go, React.js, MySQL, REST APIs*   [Source Code] | 2025

- Engineered **backend APIs** and matchmaking logic for a student-focused dating platform supporting real-time interactions and secure data handling.
- Users create profiles, receive match suggestions, and communicate via a **responsive React interface** connected to a **Go-powered backend**.

ChatBot-RAG | *Python, LangChain, FAISS, OpenAI GPT, Streamlit*   [Source Code] | 2025

- Built a **Retrieval-Augmented Generation (RAG)** chatbot using LangChain and FAISS for vector-based semantic search over custom document datasets.
- Users interact via a **Streamlit interface** by uploading documents and querying them in natural language, receiving grounded, **LLM-generated responses**.

MCP Web Automation Agent | *Python, OpenAI GPT, Streamlit, Node.js, Puppeteer*   [Source Code] | 2025

- Developed an **AI-powered browser automation agent** that converts user instructions into executable Puppeteer scripts using GPT-generated commands.
- Users enter plain-text commands (e.g., "open Google and search flights") in a **Streamlit frontend**, triggering **real-time headless browser automation**.

Movie Genres Classification | *Python, TensorFlow, Keras, CNN, BiLSTM*   [Published Paper] | IEEE, 2021

- First-authored an **IEEE-published paper** using **BiLSTM and CNNs** (ResNet50, VGG16, DenseNet169) to classify movie genres from **IMDB posters and trailers**.