

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, Apache Airflow, PostgreSQL, MongoDB, Snowflake, Vector DBs (FAISS, ChromaDB)

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

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

Experience

Graduate Research Assistant | [Advanced Computing and Information Systems](#)

Aug 2025 – Present

- Currently working on **A2A agent systems** integrated with **iChatBio SDK** that enable researchers to seamlessly query and retrieve species data across multiple biodiversity databases including **WoRMS** and **iDigBio** for research.
- Implemented **natural language processing** capabilities to resolve species queries from common names to **AphiaIDs**, enabling data extraction across **multiple endpoints** with structured **JSON artifacts**.

Technical Consultant | [Adobe](#)

Apr 2023 – Jul 2024

- Resolved complex **language translation** issues in AEM 2023.11 Cloud Service release by debugging **JCR repository** configurations and enhanced **local content delivery** for enterprise customers.
- Provided technical consultation to **EMEA based customers** on AEM infrastructure setup and resolved **62%** customer bugs, reducing escalations by enabling self-service development capabilities.

Software Development Engineer | [Optum, United Health Group](#)

Jun 2021 – Apr 2023

- Developed ETL pipelines using **Apache Airflow** and **Docker containers**, processing daily **medical claims** and **member enrollment** data that reduced manual deployment time by more than **60%**.
- Built and maintained **Power BI** and **Cognos** dashboards for healthcare provider performance tracking, enabling stakeholders to monitor patient care metrics and reducing report generation time from **2 days to 4 hours**.

Projects

Marine Species Agent | [SDK](#), Python, Pydantic Models, OpenAI, Instructor

[\[Source Code\]](#) | 2025

- Developed a **WoRMS-based agent** that integrates with **iChatBio SDK** implementing **HTTP request handling** and response processing to serve data through defined (entrypoints) with parameter validation.
- Agent is deployed and accessible for testing at test.ichatbio.org - feel free to test and share feedback on performance and improvements.

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**.

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**.