

Bertrand Rusanganwa

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Relevant Links: [LinkedIn](#) | [GitHub](#) | [My site](#)

Programming Languages: Python, JavaScript, HTML, CSS, SQL

Frameworks: React, FastAPI, Spring Boot, Spring MVC, Dash, Plotly, scikit-learn, LangChain

Technologies: Git, Docker, PostgreSQL, Playwright, Tesseract OCR, WebSockets, asyncio, Pydantic, PyAudio

EDUCATION

Missouri State University (MSU): Springfield, MO

Bachelor of Science in Computer Science, Minor in Mathematics and IT Cyber Security

Expected Graduation: May 2026

- Dean's List: Fall 2023, Spring 2024, Fall 2025
- GPA: 3.54

WORK EXPERIENCE

Efactory-TuningSQL

Jan 2025 - Present

Springfield, Missouri

Software Engineer Intern- TuningSQL

- Develop automated ETL pipelines with Python, Pandas, and SQL to extract, clean, and transform unstructured data from PDFs and web sources into structured formats, enabling faster data availability for downstream analysis.
- Optimize PostgreSQL queries, indexing strategies, and relational schema design to improve database performance and reduce query latency, resulting in faster response times and smoother scaling as data volume grows.
- Containerize backend and data-processing services using Docker, building isolated and reproducible environments that streamline deployment and enable scalable execution across development and production workflows.

Missouri State University

August 2023–Present

Springfield, MO

Resident Assistant- Residence life Department

- Coordinated 35+ residents each year by organizing community-building events and using scheduling tools, which increased resident participation in campus activities
- Fostered inclusive community with effective communication to boost resident satisfaction.
- Implemented strategic communication strategies to enhance community engagement.

Rwanda Space Agency

May 2023 - July 2023

Kigali, Rwanda

Student Intern- SDE Intern for Geospatial Data Hub — Front-End

- Refactored frontend modules to cut page load time by 20%, improving responsiveness of the Geospatial Data Hub for Earth-observation (EO) analyses.
- Delivered new React UI components for SDG-focused data exploration, collaborating with the software team to gather requirements, implement, and integrate them, which enabled analysts to visualize geospatial datasets more efficiently.
- Promoted code quality with linting, code-review checklists, and consistent styling; collaborated with cross-functional stakeholders to triage usability issues and prioritize fixes.

PROJECTS

BEARCHAT | University QA Chatbot | (Python, FastAPI, LangChain, vLLM/Ollama, FAISS)

2025

- Rewrites queries, retrieves with BM25 and vector, reranks results, generates grounded answers, cites sources, and streams tokens in real time.
- Fast API backend with typed endpoints for a React Native client; local model served via vLLM/Ollama with optional web-LLM fallback; tracing and retrieval evals on a golden set, plus rate limits and authentication.
- Ingests web data using Requests/BeautifulSoup and Playwright, as well as OCR-processed PDFs; applies layout-aware chunking with metadata enrichment and stores FAISS vector embeddings in per-tenant namespaces.

J.A.R.V.I.S | Voice AI Assistant Project | (Python, PyAudio, LangChain)

2024

- Built a low-latency speech-to-speech assistant that captures 16-kHz PCM with PyAudio, streams to ElevenLabs Realtime for ASR/TTS, and responds with natural turn-taking
- Designed an asynchronous audio pipeline with asyncio tasks, ring/jitter buffers, and optional VAD to keep capture, send, and playback smooth under load.
- Shipped a FastAPI service using LangServe and instrumented it with LangSmith traces and evaluations; added prompt-regression tests and a one-command CLI demo for fast local runs.

LEADERSHIP/CIVIC ENGAGEMENT

Student African American Brotherhood(SAAB)

March 2023 - Present

Springfield, MO

Financial Chair committee Chair

- Lead fund allocation to support organizational initiatives while ensuring responsible resource management.