

# RISHIK SARKAR

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## EDUCATION

### Cornell University

Master of Engineering in Computer Science

Aug 2024 – May 2025

GPA: 3.9/4.0

### Rutgers University-New Brunswick

Bachelor of Science in Computer Science (Honors), Cognitive Science

Sep 2020 – May 2024

GPA: 3.9/4.0

## EXPERIENCE

### Software Engineer

Instalily AI (Google AI Accelerator)

Mar '25 – Present

New York, NY

- Built a **RAG**-based agent and **MCP server** for United Rentals, leveraging **Azure AI Search** for semantic retrieval and a custom **LangChain**-style framework integrated with UR APIs.
- Optimized embedding pipelines and vector index queries, reducing average retrieval latency by 40%.
- Refined the frontend chat agent and added **PostgreSQL** logging and metrics for monitoring and optimization.

### Software Engineer (Contract)

AllAboutID (Startup)

Oct '24 – Nov '24

New York, NY

- Built a streamlined asset-management system using **MongoDB Atlas** with data-at-rest encryption, **JWT** authentication, and **RBAC**, plus dynamic **SVG** handling.
- Developed a responsive frontend with **Next.js** and **Tailwind CSS**, enforcing **HTTPS**, **CSP** headers, and input validation to mitigate **XSS/CSRF**, enhancing asset visualization and UX.

### Technical Research Assistant

Princeton University (CCNP)

Sep '23 – Present

Princeton, NJ

- Spearheading a queryable **Python/PostgreSQL** EMR database to store patient assessments and demographics.
- Engineered a **Python**-based **ETL** pipeline to consolidate 800+ Excel, CSV, and JSON files into a unified **SQLite** database with automated schema and key constraints.
- Designed a **Tkinter** GUI for non-technical researchers to run custom SQL queries and perform advanced **CRUD** via **Pandas**, simplifying workflows.

### Full-Stack Developer Intern

Provenir (Fintech)

Jun '23 – Dec '23

Parsippany, NJ

- Developed an automated credit-risk decisioning system by integrating Decision Trees, Random Forests, XGBoost, and RNNs via **scikit-learn** and **TensorFlow**, achieving 95% accuracy.
- Enhanced model interpretability with **SHAP** and **LIME**, wrote 100+ **MockMvc** unit tests, and containerized deployments on **Minikube**, boosting reliability by 20% and reducing decision latency by 98%.
- Optimized API endpoints for artifact generation and log retrieval to enable real-time monitoring, driving a 135% increase in conversions.

## PROJECTS

### ReddiGist | Next.js, Flask, TypeScript, NLP, Supabase

Oct 2024 – Present

- Developed a full-stack web application that analyzes Reddit discussions by processing up to 5,000 comments per request using multi-threaded retrieval and n-gram detection for accurate summarization.
- Optimized performance with **LRU caching** and batch processing, and managed data persistence via **Supabase**.

### Tch.ai | Next.js, Tailwind, Flask, Keras, OpenCV, Pandas, MySQL

Apr 2023 – Jul 2023

- Built a full-stack app deploying a **Keras** image classifier (FER-2013 + OpenCV preprocessing) and tokenizer to recommend songs based on mood—achieving 96% training and >70% validation accuracy.
- Designed a responsive **Next.js/Tailwind CSS** frontend with multi-method genre selection and integrated a secure remote **MySQL** backend for user account management.

## TECHNICAL SKILLS

**Languages:** Python, Java, C++, JavaScript, C, SQL, C#

**Web Technologies:** HTML, CSS, Next.js, Tailwind CSS, Flask, Spring

**Databases/DevOps:** MySQL, MongoDB, SQLite, JDBC, Supabase, Docker, Kubernetes, Jenkins, Amazon AWS, Git, Jira