

# RISHIK SARKAR

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## EDUCATION

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### Cornell University

Aug 2024 – (May 2025)

Master of Engineering in Computer Science

### Rutgers University-New Brunswick

Sep 2020 – May 2024

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

GPA: 3.9/4.0

- Honors: Summa Cum Laude, SAS Honors Program, Phi Beta Kappa, Dean's List

## EXPERIENCE

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### Software Engineer (Part-time)

Oct 2024 – Present

AllAboutID

Remote

- Built a secure and streamlined asset management system for an interior design startup, leveraging **MongoDB Atlas** and SVG handling for seamless furniture integration within the API
- Developed the frontend using **Next.js** and **Tailwind CSS**, including asset display features, enhancing the user interface and user experience

### Research Assistant

Sep 2023 – Aug 2024

Princeton University (CCNP)

Hybrid

- Created **Python** scripts to transform 800+ Excel, CSV, and JSON files from five clinical studies into a consolidated **SQLite** database, seamlessly integrating automated schema generation with key constraints. The data encompasses clinical assessment results for mental health conditions like depression and BPD, using scales and structured interviews (e.g., HDRS, BPRS, PANSS, SCID)
- Designed a streamlined **Tkinter**-based GUI to simplify database interactions for researchers without technical knowledge, incorporating advanced functionality for executing custom SQL queries through **Pandas**

### Full-Stack Developer Intern

Jun 2023 – Dec 2023

Provenir (Fintech)

Remote

- Built an automated credit risk decisioning solution by integrating Decision Trees, Random Forests, XGBoost, and RNNs into FLAML using **scikit-learn** and **TensorFlow**, achieving a 95% prediction accuracy in customer credit risk assessments through hyperparameter tuning and monotonic constraints
- Collaborated with a team of 5 engineers to enhance AI explainability by incorporating SHAP and LIME visualizations, enabling stakeholders to understand the rationale behind risk scores and make more informed, data-driven decisions in real-time
- Implemented over 100 unit tests with **MockMvc**, increasing software reliability by 20%, and streamlined model deployment on **Minikube**, contributing to scalable testing practices adopted in subsequent releases
- Refined API endpoints for artifact generation and log retrieval, which enabled seamless monitoring of model performance and continuous learning from data to optimize decision-making processes

## PROJECTS

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

Apr 2023 – Jul 2023

- Innovated a full-stack web application to deploy a **Keras** image classifier and tokenizer that recommend songs based on mood predictions from facial expressions or textual data
- Trained the classification model on the **FER-2013** dataset and utilized **OpenCV** and a Haar Cascade classifier to preprocess datasets, achieving a training accuracy of around 96% and a validation accuracy of over 70%
- Designed a **Next.js/Tailwind** frontend that supports three genre selection methods—image, text, and manual
- Crafted a **Flask** REST API backend for image data preprocessing, providing personalized playlists from a CSV of 114,000+ songs, fine-tuned using genre, mode, valence, and other features
- Integrated a remote **MySQL** database, allowing users to create accounts and manage liked songs

## TECHNICAL SKILLS

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**Languages:** Python, Java, JavaScript, C++, C, C#, Kotlin, Dart, Rust, SQL, MATLAB, Scheme

**Frameworks and Libraries:** PyTorch, TensorFlow, scikit-learn, Keras, OpenCV, Pandas, Flask, Spring, Next.js, Tailwind CSS, BeautifulSoup, Tkinter, JDBC, CUDA, Numba, JUnit, MockMvc, MongoDB, MySQL, SQLite

**DevOps and Tools:** Docker, Kubernetes, Minikube, Jenkins, Amazon AWS, Git, Jira, Jupyter