RISHIK SARKAR

+1-732-783-8669 | rishiksarkar02@gmail.com | github.com/RishikSarkar | rishiksarkar.com

EDUCATION

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

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
- 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

Invasion of the Bot-Grabbers | *Python, Jupyter, Pandas, PyTorch, Matplotlib* Sep 2023 – Dec 2023

- Implemented search algorithms including **A*** and **D* Lite** to develop an automatic crew rescue maze simulation for a graduate-level course
- Enhanced the bot's decision-making by integrating **Bayesian networks**; utilized sensors to determine optimal paths to crew members probabilistically while avoiding moving obstacle aliens
- Trained two **logistic regression** models to predict the bot's moves and win probabilities, incorporating features engineered from the probability matrices calculated earlier, enhancing efficiency
- Advanced the bot's performance by implementing an ACTOR-CRITIC RL framework with **PyTorch**

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

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, Beautiful Soup, Tkinter, JDBC
DevOps and Tools: Docker, Kubernetes, Minikube, Jenkins, AWS, Git, Jira, Jupyter