

Rishindra Davuluri

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EDUCATION

The University of Texas at Austin *B.S., Computer Science Honors* Austin, TX
Texas CSB Honors Program *B.B.A., Canfield Business Honors* Aug. 2023 - May 2027

Relevant Coursework: Machine Learning II (H), Principles of ML I, Algorithms (H), Java Data Structures (H), C++ Operating Systems (H), Computer Architecture w/ C (H), Object-Oriented Programming, SQL MIS (H), Data Science in R (H), Decision Science (H), Discrete Math (H), Linear Algebra, Multi-variable Calculus, Statistics & Probability (H) = Honors

Work Eligibility: US Citizen

EXPERIENCE

UT Austin: Learning Directed Operating System (LDOS) - ML Researcher; Austin, TX Oct 2025 - Present

- Designing **Model Context Protocol (MCP)** to enable efficient coordination between neural network agents managing OS resources
- Prototyping MCP using **Multi-Agent Reinforcement Learning** to optimize resource allocation and system performance

Capital One - Software Engineer Intern; McLean, VA June 2025 - Aug 2025

- Enabled omni-channel experience for Fraud Concern agents by developing cache library with **Python, AWS Lambda, Snowflake**
- Integrated cache into *Empath* webpage with **Vue + JS**, improving workflow completion by up to **40%** for **80K** monthly callbacks
- Built phishing simulation platform using **Next.js** and **Twilio** to send custom emails, track user clicks, and provide security training

UT Austin: Dynamic Belief Games (DBG) - ML Researcher; Austin, TX Sept 2024 - Jan 2025

- Utilized Stackelberg competition model and **PyTorch SB3** to train ML algorithms optimizing network communication in **GCNNs**
- Leveraged **NumPy, Pandas, and Matplotlib** to present data analysis and visualization to U.S. Army Futures Command's UTDD

Fidelity Investments - Software Engineer Intern; Westlake, TX Jun 2024 - Aug 2024

- Enhanced Single Point Update batch with **AWS Q Developer, SQL, & MyBatis** to update **millions of changes** to central DB
- Accelerated batch processing by **20%** by migrating 30+ files from C++ to Java for multithreading, scalability, and cloud integration
- Presented sequence diagrams, Confluence documentation, and AI tool benefits to **~200 employees**, chapter heads, and vice presidents

PROJECTS

RestoreAI | Python, Pandas, NumPy, Random Forest, Gemini AI, React, JavaScript, RESTful APIs

- Built a **Random Forest ML model** using **Python, Pandas, and NumPy** to optimize seed planting for environmental restoration
- Streamlined user data collection and engagement by implementing **Gemini AI** prompting for a more intuitive conversational interface
- Ensured fast and secure LLM response times by integrating **RESTful APIs** with the frontend, database, and random forest model

Operating System & Graphics | C++, Python, Assembly, QEMU, Bash, Linux, Multi-threading

- Developed interrupt handling with **O(1) helper threads** and core **system calls** like fork, wait, **semaphores**, and thread operation
- Engineered **virtual memory** and **Ext2** file system components with page directories and third-level indirection
- Designed graphics subsystem using **VBE**, integrating assembly MBR programming and **Python** video frame conversion

Search Engine | Java, Attoparser, Spring Boot, Data Structures, Trees, Algorithms

- Engineered a robust search engine in **Java**, utilizing the **Attoparser** library to efficiently parse and index web content
- Implemented query tree handling complex searches with logical operators and a **custom ranking algorithm** for search results
- Designed a web crawler to systematically **navigate and index** a network of web pages, building a comprehensive search database

LEADERSHIP EXPERIENCE AND ACTIVITIES

Texas Infinites - Gender Inclusive Spirit and Service Organization, Recruitment Committee; Austin, TX Jan 2025 - Present

Texas Product Engineering Organization - Engineering and Product Fellow; Austin, TX Sept 2024 - Present

- Selected as one of eight Engineering fellows to develop Austin-based client projects with tools like **React, REST APIs, and Vercel**
- Developed and hosted WeatherApp, TodoApp, and Locus - a study and location-tracking app - with **Firestore, TS, and NodeJS**

Texas Convergent - Forge Tech Member, Meals on Wheels (MoW) and Cura Project Intern; Austin, TX Aug 2023 - Sept 2024

- Trained ML model using **Tensorflow** with **20+** mental health conditions and managed Cura data with **Supabase, FastAPI, SQL**
- Delivered maps and wellness checks to **50+ MoW** drivers and updated client info in Salesforce with **Python, Flask, SQL, SOQL**

ADDITIONAL INFORMATION

Technical Languages: Python, C++, C, Java, JavaScript, TypeScript, C#, R, SQL, SOQL, CQL, HTML, CSS

Tools: PyTorch, Tensorflow, Pandas, NumPy, React (Native, Redux), Snowflake, AWS, Next.js, Vue, Matplotlib, Apache Cassandra, MyBatis, Firebase, Flask, FastAPI, Salesforce, Linux, Postman, Agile, Scrum, Docker

Certifications: Eagle Scout | Azure AI Fundamentals (Aug 2023) | NLP & Text Mining by Simplilearn (Sept 2023)

Interests: Singing & Guitar, Camping, Portrait Drawing, Sustainability, Minecraft, Anime, Volleyball, Soccer, Ping Pong

Languages: Native in English and Telugu, Conversant in Spanish