

# Rishindra Davuluri

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## EDUCATION

The University of Texas at Austin <i>Texas CSB Honors Program</i>	B.S., Computer Science Honors B.B.A., Canfield Business Honors	Austin, TX Aug. 2023 - May 2027
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**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) - <i>ML Researcher</i> ; Austin, TX	Oct 2025 - Present
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- 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 - <i>Software Engineer Intern</i> ; McLean, VA	June 2025 - Aug 2025
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- 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) - <i>ML Researcher</i> ; Austin, TX	Sept 2024 - Jan 2025
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- 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 - <i>Software Engineer Intern</i> ; Westlake, TX	Jun 2024 - Aug 2024
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- 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	
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- 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	
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- 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	
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- 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 - <i>Gender Inclusive Spirit and Service Organization, Recruitment Committee</i> ; Austin, TX	Jan 2025 - Present
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Texas Product Engineering Organization - <i>Engineering and Product Fellow</i> ; Austin, TX	Sept 2024 - Present
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- 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 Firebase, TS, and NodeJS

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