

Pranav Dronavalli

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Education

University of Wisconsin - Madison

B.S in Computer Science, Mathematics 3.87/4.0 GPA

Madison, WI

Sep. 2021 – May 2025

Experience

Capital One

Software Engineer Intern

May. 2024 – Present

Dallas, TX

Integral

Software Engineer Intern

May. 2023 – Aug. 2023

Madison, WI

- Improved ML model precision by 6% by creating a shallow neural network model with PyTorch for the model aggregation
- Migrated ML infrastructure to the cloud, and created scheduled SQL queries to retrieve model data from MySQL
- Created ETL pipelines using airflow to move data from MySQL, transforming it in BigQuery, and adding data as dimensions to LookML model
- Developed API's in NestJS to integrate Google Looker Studio dashboards into the Angular app

Undergraduate Researcher

Wisconsin Institute for Discovery

Dec. 2023 – Present

Madison, WI

- Conduct research under professor Robert Hawkins focused on bridging the gap between GenAI and human cognition
- Experiment with new generative agent memory architecture to help agents escape their LLM limitations
- Developed experiment's application and data pipelines for result analytics as well as integrating error monitoring

Projects

Swapper | Go, RavenDB, React, TypeScript

Feb. 2024

- Won 1st place in RavenDB's prize track out of 2K+ participants
- Developed a marketplace to exchange free items supporting: user messaging, spatial searching, fuzzy search, product reviews, and more
- Designed efficient data models, queries, and implemented programmatic generation of database indices
- Created a user friendly interface with React to support user messaging, item filtering, and user profiles

Cryptify | Rust

Jan. 2024

- Created an open-source procedural **macro crate** for run-time string literal encryption and flow obfuscation
- Developed a cli tool to automatically insert macros from the library at random points into the source
- Includes optional features to obfuscate the source code directly with variable renaming and control flow obstruction

PranavBot AI Chatbot | Node.js, AWS Lambda, API Gateway, ECR, CloudFront

Sep. 2023

- Built a serverless chat bot application for my website using AWS Lambda, ECR (Docker), and a fine-tuned LangChain model to answer questions about me on my portfolio website
- Integrated chatbot into Astro/Tailwind frontend using API Gateway
- Implemented CI/CD pipeline using Github Actions to automate AWS deployment on each successful build

Achievements and Leadership

Undergraduate Projects Lab Coordinator (UPL) | Workshops, Talks, Mentorship

Dec. 2022 - Present

Sous Chef - Organizer (Food for Thought) | Community Development

Jan. 2024 – Present

Madhacks | Lead Organizer

Feb. 2023 - Present

- Organized multiple hackathons with 650+ applicants, 250+ attendees, 50+ projects submitted, and 15K+ in funding

Technical Skills

Languages: Java, Python, Go, C, C++, JavaScript, TypeScript, SQL, HTML/CSS, R

Frameworks/Libraries: React, Angular, Astro, Node.js, NestJS, Express

Infrastructure/Dev Tools: AWS, Docker, PostgreSQL, Cassandra, Spark, Kafka, GCP, Git, GitHub Actions, VSCode