

# Pranav Dronavalli

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## Education

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### University of Wisconsin - Madison

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

Madison, WI

Sep. 2021 – May 2025

## Experience

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### Software Engineer Intern

May. 2023 – Aug. 2023

Entegral

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

Dec. 2023 – Present

Wisconsin Institute for Discovery

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

### Undergraduate Projects Lab Coordinator

Dec. 2022 – Present

University of Wisconsin-Madison

Madison, WI

- Supervised the lab, allowed students to use our hardware, and helped members with classwork
- Maintained our server infrastructure including a kubernetes cluster and expanded our infrastructure capabilities
- Organized computer science related events for students including: tech talks, workshops, and most notably hackathons with over 300 participants

## Projects

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### 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

### Rust Obfuscator | Rust

Jan. 2024

- Created an open-source procedural macro crate (cryptify) 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

### IncentiVise | Node.js, Go, PostgreSQL, React

Sep. 2023 - Present

- In process of developing SaaS-based startup MVP, integrating a diverse tech stack encompassing Node.js, Go, PostgreSQL, and React
- Built backend on Postgres with a separate concurrent Go service capable of handling many simultaneous requests
- Incorporated Integration testing with Jest testing all endpoints of Node API

## Technical Skills

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**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