

University of Wisconsin–Madison

Aug. 2021 – Dec. 2024

B.S. Computer Sciences

Experience

Capital One

Chicago, IL

Software Engineer

Feb. 2025 – Present

- Architecting and developing a scalable, reusable payment system using Lambda, Kafka, SQS, and DynamoDB, designed to support secure and reliable processing for millions of customers across Capital One products.
- Developed frontend (React/React Native) and backend features using TypeScript on the payment service within Velocity Black platform, integrating Stripe auth, VCN provisioning, and Membership automation in an event-driven architecture.
- Delivered HSD/PCI encryption and redaction cross-service within the Platform’s Messaging to meet a compliance deadline – implemented encrypted message storage within RDS and managed schema via Knex migrations.

Capital One

Piano, TX

Intern

Jun. 2024 – Aug. 2024

- Contributed to internal MLaaS Platform used that identifies anomalies for fraud detection. Data and insights from the platform save the company over \$600 million in potential losses.
- Created functionality for parameter sharing across ML workflows reducing redundancies and error in tool usage.
- Added typing within React UI and Python SDK while preserving backwards compatibility.

Enterprise Rent-A-Car

Madison, WI

Intern

May. 2023 – Aug. 2023

- Built ETL pipelines for analytics using Airflow; NestJS API to integrate Google Looker Studio in Angular app.
- Improved ML model precision by 6% using a shallow neural network model for model aggregation in PyTorch.

Wisconsin Institute for Discovery

Madison, WI

Undergraduate Researcher

Dec. 2023 – Sep. 2024

- Under Prof. Robert Hawkins, contributed to research bridging the gap between GenAI and human cognition.

Projects

Swapper | Go, React, TypeScript, RavenDB

Feb. 2024

- Won 1<sup>st</sup> place at RavenDB hackathon (out of 2000 participants) for virtual trading application.
- Developed full stack with features: spatial search, fuzzy search, user profiles, interactive messaging, and item/profile ratings.

Cryptify | Rust

Jan. 2024

- Created and maintain open source library with 16,000+ downloads used to obfuscate Rust programs at runtime and at rest.
- Includes features to obfuscate source code directly with variable renaming and direct flow obstruction.

Distributed File Transfer | Python

Sep. 2024

- Designed UDP-based file transfer protocol with custom packet format, addressing scheme, and packet reassembly.

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

Sep. 2023

- Built serverless chatbot with Lambda, ECR, and a fine-tuned LangChain model to answer questions on my website.

Leadership & Achievements

AWS Certified Solutions Architect - Associate

Aug. 2025

Undergraduate Projects Lab Coordinator

Dec. 2022 – Dec. 2024

- Hosted workshops, tech talks, and CS department-sanctioned events; provided tutoring to students.

MadHacks Organizer

Feb. 2023 – Dec. 2024

- 3x organizer of the largest hackathon at UW-Madison (650+ applicants, 300+ attendees, \$15,000+ in funding)

GitHub Campus Expert

Dec. 2023 – Dec. 2024

- Lead instructional workshops and represented GitHub within CS department of 3,000 students.

Skills

Go, Python, JavaScript, TypeScript, Rust, Java, C, C++, SQL, AWS, Kafka, React, React Native, Astro, Angular, Node.js, NestJS, Express, HTML/CSS