

# Richin Mrudul

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## EDUCATION

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### Purdue University

West Lafayette, IN

*B.S. in Computer Science; Minor in Math; Concentration in Machine Intelligence*

*Expected December 2027*

Relevant Courses: Data Structures & Algorithms, OOP (Java, C), Systems Programming, Computer Architecture, Data Mining and Machine Learning, Discrete Math, Statistics, Linear Algebra & Multivariate Calculus

## TECHNICAL SKILLS

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**Languages:** C/C++/C#, Java, Python, Go, TypeScript, JavaScript, SQL, Bash

**Libraries/Frameworks:** React, React Native, Node.js, Next.js, FastAPI, JUnit, PyTorch, TensorFlow, scikit-learn

**Technologies & Tools:** REST API, Git, Docker, Kubernetes, Azure AKS, AWS, GCP, CI/CD, GitHub Actions, GHCR, PostgreSQL, MySQL, Redis, MinIO/S3, FFmpeg, Prometheus, Grafana, Django, Netlify, Render

## EXPERIENCE

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### Pendo.io

Raleigh, North Carolina

*Incoming Software Engineer Intern*

*Starting June 2026*

- Summer 2026

### Boilerexams

West Lafayette, IN

*Backend Developer*

*August 2025 – Present*

- Improving backend systems for **Boilerexams**, serving **30,000+** students and processing **11M+** submissions
- Migrating API endpoints from **TypeScript/Prisma** to **Go (Golang)** to improve backend scalability and latency
- Optimized **PostgreSQL** queries for **11M+** submissions over **3,000+** questions, reducing query latency **20%**
- Containerized backend services with **Docker** and improved reliability via **logging** and **error handling**

### Profitize

Remote

*Software Engineer*

*July 2025 – Present*

- Built a SaaS analytics platform for **500+** Amazon sellers automating profit analysis and product research
- Engineered scraping pipeline with **Python, Playwright, Selenium, & RapidFuzz**, reducing research time **80%**
- Implemented real-time fuzzy matching across Amazon listings to improve product data accuracy
- Deployed infrastructure using **Netlify, Render, and GitHub Actions**, achieving **< 2 load times**

### The Data Mine - Purdue University

West Lafayette, IN

*Undergraduate Data Science Researcher*

*August 2024 – May 2025*

- Built an **AI-assisted data pipeline** for the **Indiana Soybean Alliance**, cutting collection time **96%** (428→14s)
- Integrated **LLMs** like **ChatGPT** to automate program classification with **NLP-driven analysis**
- Migrated hard-coded datasets to a live **PostgreSQL** database enabling real-time updates and search
- Developed an admin dashboard for publishing and managing program data through a scalable backend

## PROJECTS

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### [Distributed Video Processing Infrastructure](#) 🐙 | [Demo](#) 🗄️

- Built **Kubernetes**-deployed distributed video-processing system with **FastAPI, Redis/RQ, Postgres, MinIO**
- Separated upload ingestion from CPU-bound **FFmpeg** execution via async queues and worker pools
- Improved reliability with **idempotency, retries, stuck-job recovery, and admission control**
- Scaled workers **1→5** in benchmarks, increasing throughput **2.5x** from **4.46** to **11.13 uploads/sec**

### [FitTrack](#) 🐙 | [Website](#) 🗄️

- Built a full-stack fitness tracker using **React** and **Firebase** for workout logging and progress tracking
- Implemented onboarding with **Firebase Auth** and **Google OAuth** to personalize plans from user fitness data
- Integrated **OpenAI GPT-4** to generate personalized **7-day workout plans**, improving completion **45%**
- Used by **20+** users generating **100+** plans and logging **500+** workouts in the first **3 weeks**

### [Cooked](#) 🐙 | [Website](#) 🗄️

- Built a full-stack meal tracker with **React**, ranking recipes using an **ELO-based comparison system**
- Designed relational **PostgreSQL** schema linking meals, users, tags, and rankings for fast queries
- Implemented auth and profile system with **JWT** and **Cloudinary** image uploads
- Built search, filters, and **CRUD** workflows with streak tracking, driving **3+** meals logged/user/week