

# Mohit Manna

[tinyurl.com/mohit542](https://tinyurl.com/mohit542) | [linkedin.com/in/mohit542](https://linkedin.com/in/mohit542) | [github.com/MohitManna-2006](https://github.com/MohitManna-2006)

## EDUCATION

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### Purdue University

May 2027

BS Computer Engineering

Minor: Math & Finance

- **Coursework:** Advanced Circuits · Data Structures · Discrete Math · System Design
- **Organizations:** Data Mine (CAT) · Embedded Systems · Vertically Integrated Projects · Telugu Association

## EXPERIENCE

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### Caterpillar | Data Science Researcher

Aug 2025 – Present

- Improved CAT's supply-chain forecast accuracy by 10% by training a multi-horizon transformer model
- Reduced demand-forecasting model latency by 5% via a PyTorch pipeline with vectorized preprocessing
- Minimized CAT analysts' manual reporting time by 6 hours/week with a SQL-backed Power BI sprint dashboard

### Purdue Stack | Software Developer

Sep 2024 – Present

- Engineered a rate-limited Flask backend to automate TA assignments for 200+ TAs, replacing existing spreadsheets
- Designed a PuLP-based TA–course scheduler for conflict-free staffing across 30 math sections
- Secured admin portal with stateless JWT auth and RBAC, centralizing access control across 6 departments

### Creative Capital | Software Engineer Intern

Mar 2025 – Aug 2025

- Scaled a React dashboard to 200+ real-estate investors, enabling live tracking and cutting server load by 15%
- Secured investor data with JWT-guarded Express APIs and Postgres RLS, preventing cross-investor access
- Improved investor return projections by 20% using a scikit-learn growth forecaster with constraint-based allocation

### MySphere | Software Developer Intern

Jun 2025 – Aug 2025

- Overhauled React Native UI, lifting Lighthouse accessibility to 90+ and cutting task competition time by 15%
- Indexed task/profile queries behind Node APIs, reducing ~120 ms off task-feed latency for 300+ concurrent users
- Integrated speech-to-text with OpenAI Whisper + WebSocket streaming, enabling ~35% of tasks via voice

## PROJECTS

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### Backend Engineer – Google Developer Group

- Architected a Chrome Extension to school calendars for tasks and automate reminders, used by 200+ students
- Added background sync with smart desktop alerts, reducing manual tracking time by 30%

### Firmware Engineer (BB-8 Robot) – Embedded Systems Club

- Implemented C firmware for microcontroller units, boosting wireless communication range by 4 meters
- Developed drivetrain–sensor interface for motion control, enabling 40 synchronized robot actions/min

### Scientific Computing Research Assistant – Integrated Photonics Lab

- Developed automated Python ETL pipeline for 10,000+ waveguide simulations, cutting analysis time by 18%
- Awarded 1st place of 200 at Purdue Research Symposium for 99.7%-accurate waveguide efficiency simulations

## SKILLS

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- **Languages:** Python · TypeScript · Java · C/C++ · SQL · R
- **Frameworks:** React · Next.js · Django · Express.js · MongoDB · Flask
- **Tools:** Git · Docker · AWS/Azure · Firebase · Kubernetes · Jenkins · Vercel