

Mohit Manna

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EDUCATION

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

Caterpillar <i>Data Science Researcher</i>	<i>Aug 2025 – Present</i>
• 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 <i>Software Developer</i>	<i>Sep 2024 – Present</i>
• 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 <i>Software Engineer Intern</i>	<i>Mar 2025 – Aug 2025</i>
• 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 <i>Software Developer Intern</i>	<i>Jun 2025 – Aug 2025</i>
• 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

Backend Engineer – <i>Google Developer Group</i>	
• 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) – <i>Embedded Systems Club</i>	
• 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 – <i>Integrated Photonics Lab</i>	
• 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

- **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