

Mohit Manna

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EDUCATION

Purdue University	May 2027
BS Computer Engineering	Minor: Math & Finance
- Coursework: Advanced Circuits · Data Structures · System Design	
- Organizations: Vertically Integrated Projects · Data Mine (CAT) · Embedded Systems	

EXPERIENCE

Caterpillar <i>Data Science Researcher</i>	<i>Aug 2025 – Present</i>
• Improved CAT's supply-chain forecast accuracy by 15% by training a multi-horizon transformer model	
• Reduced demand-forecasting model latency by 10% via a PyTorch pipeline with vectorized preprocessing	
• Reduced 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>
• Deployed a rate-limited Flask backend to automate assignments for 200+ TAs, replacing manual spreadsheets	
• Designed PuLP-based TA-course scheduling model 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>
• Automated Node + SendGrid onboarding workflows, reducing manual investor verification time by 25%	
• Deployed Supabase APIs with row-level security, reducing average query latency by 240 ms	
• Built React dashboard views for investor profiles and recommendations, used by 100+ accounts	
MySphere <i>Software Developer Intern</i>	<i>Jun 2025 – Aug 2025</i>
• Implemented speech-to-text workflow using Express, increasing task completion for 300 users	
• Refactored Express auth APIs with JWT middleware, raising successful sign-ins by 1,200+ sessions	
• Optimized React Native screens intended for senior citizen users, reducing taps per task by 20%	

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	
Python Researcher – <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