Mohit Manna

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EDUCATION

Purdue University **May 2027**

BS Computer Engineering (GPA: 3.72 / 4.00) Minor: Math & Finance

- **Coursework:** Advanced Circuits · Data Structures · Discrete Math · System Design
- **Organizations**: Data Mine · Purdue Stack · Vertically Integrated Projects · Telugu Association

EXPERIENCE

Caterpillar | *Data Science Researcher* ***Aug 2025 – Present***

- Boosted CAT's supply-chain forecast accuracy by 10% with a multi-horizon transformer model and automated backtesting
- Reduced demand-forecasting model latency 5% by refactoring a PyTorch inference pipeline, automating performance tests
- Cut analysts' manual reporting time 6 hrs/week by automating a SQL-backed Power BI dashboard with scheduled refresh

Purdue Stack | *Software Developer* ***Sep 2024 – Present***

- Engineered a rate-limited Flask backend to auto-assign 200+ TAs, replacing spreadsheets/catching conflicts via validation
- Implemented PuLP-based optimization scheduler and tests to ensure conflict-free TA staffing across 30 math sections
- Hardened admin portal with stateless JWT auth, RBAC, and access-control tests for privileged routes in 6 departments

Creative Capital | *Software Engineer Intern* ***Mar – Aug 2025***

- Scaled a React dashboard to 150+ investors via performance profiling, enabling 12% lower server load for live tracking
- Secured investor data with JWT-protected Express APIs, Postgres RLS, and integration tests to prevent data leaks
- Improved investor return projections by 20% via a scikit-learn growth forecasting model using constraint-based allocation

MySphere | *Software Developer Intern* ***Jun – Aug 2025***

- Overhauled React Native UI with accessibility tests and Lighthouse audits, reaching 90+ scores and cutting task time 17%
- 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

Software Engineer (Backend) – *Google Developer Group*

- Implemented Node.js service to auto-sync tasks with Google Calendar for 200+ students with OAuth2 and error logging
- Developed Chrome extension for background sync and desktop notifications, cutting manual task tracking time by 30%

Embedded Software Engineer (BB-8 Robot) – *Embedded Systems Club*

- Wrote firmware code in C++ for microcontrollers with RF tuning and quality checks to extend wireless range by 4 meters
- Engineered drivetrain–sensor control interface with real-time feedback, enabling 40 synchronized robot actions/minute

Scientific Computing Research Assistant – *Integrated Photonics Lab*

- Built automated Python ETL pipeline with validation for 10,000+ waveguide simulations, cutting analysis time by 18%
- Won 1st of 200 at Purdue Research Symposium for 99.7%-accurate waveguide simulations using numerical methods

SKILLS

- **Languages:** Java · Python · C · C++ · C# · Typescript · Javascript · SQL · Bash · Go · R
- **Frameworks:** React · Next.js · Node.js · Express.js · Django · Flask · Angular
- **Tools:** Git · Docker · AWS · Firebase · Kubernetes · Jenkins · PyTest · PostgreSQL
- **Certifications:** CI/CD & DevOps · Object Oriented Design & Patterns · Software Automation · Linux scripting