

Nayab Hossain

+1 408 449 8129 | nayabibnhossain@gmail.com | San Jose, CA | nayabibnhossain.wixsite.com/site

EDUCATION

San José State University

Planning for Bachelor of Science in Computer Engineering

Coursework : Calculus I & II • Discrete Mathematics • Advanced Programming in Java & Python • Data Structures

2029

San Jose, CA

EXPERIENCE

Polaris: polaris-dev.co

Co-Founder

2026

San Jose, CA

- Got the start-up accelerated by Plug & Play Tech Center.
- Hooked 4 robotics team at Santa Clara Robotics with Polaris.
- Built real-time conflict detection engine for FPGA/firmware teams using deterministic git merge-tree analysis + semantic detectors across VHDL, Verilog, TypeScript and C — flags breaking changes in under 5 seconds before any push.
- Shipped cross-file blast radius analysis for solo engineers, surfacing files semantically break a base package or port definition changes.
- Conducted 50+ customer discovery interviews with FPGA engineers at CERN, national labs and semiconductor companies.

Penta Global

Software Developer

Apr 2024 – Aug 2024

- Containerized LLaMA-3 and Mistral models using Docker for reproducible environments.
- Built automated validation pipelines with Pandera to for data schemas and reduce runtime errors.
- Used Unsloth to accelerate fine-tuning and cut training cost by >40%.
- Automated internal analytics reports with Python and Matplotlib, improving speed by 3x.

PROJECTS

Parallel - AI Workspace for Continual Learning

- Built and shipped Parallel, an enterprise-ready AI workspace that unifies team knowledge, conversations & action tracking so organizations can execute faster with fewer tool silos.
- Enabled AI collaboration for teams by centralizing chats + tasks and making outcomes traceable from discussion → decision → execution.
- Designed the platform for enterprise reliability and scale with PostgreSQL + pgvector to power semantic search and context-aware workflows across large workspaces.
- Delivered real-time, consistent experience via SSE and sync/pagination, keeping web and multi-worker deployments in lockstep.
- Built a VS Code extension for in-editor enterprise workflows, using scoped PAT auth to sync workspace context (tasks + chats) and provide AI assistance inside the developer workflow.

NanoBrief — Agentic Ops + Content Pack Generator

- Built an agent that turns messy inputs (notes/changelogs/requests) into a publish-ready content pack (update, announcement, FAQs).
- Used Gemini Nano Banana for on-device planning and safety filtering; generated visuals from prompts and added an approval workflow to prevent hallucinations/leaks.
- Evaluated the agent on remotelabor.ai economically-useful task benchmark; achieved **2.08%**

Volta - Feedback-to-Ticket Bridge

- Built an X → GitHub pipeline that turns high-engagement replies into issues, implementation plans, and shipped fixes.
- Integrated X Account Activity webhooks via Python XDK to track replies and trigger DM-based clarification.
- Used Grok 4 to summarize feedback (including screenshots) into structured requirements.
- Orchestrated Grok Code Fast to implement changes and open PRs from a generated plan.
- Added review/quality gates (tests/build → PR → approval → merge) and auto-notified users after shipping.

SKILLS

- **Programming:** Python, Java, TypeScript, JavaScript, SQL, Bash
- **Backend & Systems:** FastAPI, REST APIs, PostgreSQL, SQLite, pgvector, Server-Sent Events (SSE), deterministic sync & cursor-based pagination, authentication & authorization, Personal Access Tokens (PAT), OAuth 2.0, rate limiting, schema validation
- **AI & ML:** LLMs (LLaMA, Mistral, Gemini), prompt engineering, agentic systems, Retrieval-Augmented Generation (RAG), semantic search, fine-tuning with Unsloth, model evaluation, hallucination mitigation, safety filtering
- **Tooling & Platforms:** Docker, Git, GitHub, VS Code Extension API, Cursor, Trae, Claude Code, Codex, Google Colab, Linux
- **Hardware & Edge:** Raspberry Pi, camera modules, real-time inference, resource-constrained systems
- **Testing & Quality:** Pandera, Matplotlib, data validation pipelines, API contract validation, linting, deterministic builds

ACHIEVEMENTS & ACTIVITIES

- Won Scoop AI Hackathon 2025, TRAE @ Silicon Valley 2025, Google Agentic Commerce Hack, Intercom Hackathon
- Built & Pitched for Daytona HackSprint 2025, IBM Watsonx Hackathon and SCE Hacks.