

Justin Manoj (he/him)

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Education

University of Massachusetts - Amherst (Commonwealth Honors College)

Amherst, MA

Bachelor of Science in Computer Science & Mathematics | Cumulative GPA: 3.7/4.0

Expected: May 2027

- **Coursework:** Algorithms, Operating Systems, Machine Learning, Scalable Web Systems, Search Engines, Data Management
- **Honors & Awards:** Chancellor's Award, Dean's List, NYS Scholarship for Academic Excellence

Experience

Full-Stack Software Engineer

Boston, MA

ChitChat Workplace

April 2025 – Present

- Integrated chat, email, video calls, and calendar into one workspace using React, Next.js, TypeScript, and Microsoft Graph.
- Reduced context switching by **10+ hours/month** by unifying communications and scheduling in a single surface.
- Added OpenAI API copilot for smart replies, meeting summaries, priority notifications, and context-aware suggestions.
- Built real-time WebSocket+Redis pipeline for **5,000+ messages/day**; shipped React widget SDK for third-party embeds.

Software Engineer Intern

Alberta, CA

GBCS Group/SkyIT Services

March 2025 – Present

- Migrated **8** REST endpoints to GraphQL to eliminate overfetching and shrink client requests on internal SaaS platform.
- Optimized React Query, code splitting, and PostgreSQL indexes to cut page load times by **30%**.
- Delivered **60+** reusable TypeScript/Tailwind components and enforced code quality across **100+ PRs** by implementing TypeScript linting rules, Jest utilities, and component documentation.

Undergraduate Student Researcher

Amherst, MA

Early Research Scholars Program - UMass Amherst

Dec 2024 – Feb 2025

- Developed Python framework to detect malicious prompts in **500+** test cases, reducing manual review time by **70%**.
- Enabled repeatable regression testing for GPT-4, Claude, and Llama with parameterized cases and standardized outputs.
- Tested **10+** LLM attack vectors and proposed security hardening recommendations for production deployment.

Projects

UMass Dining Recommendation Engine

PyTorch, FastAPI, Next.js, Redis, PostgreSQL, Scikit-learn

- Built ML recommendation system to help students discover meals across **100+** menu items daily using PyTorch and sentence-transformers for personalized dietary-preference matching.
- Deployed a FastAPI service handling **120-200** daily requests; added Redis caching to cut latency by **~55%** (2.1s→0.9s).
- Implemented a custom embedding pipeline and **ε-greedy** multi-armed bandit for improving recommendation accuracy.

Terminal Clipboard History Manager

Go, Bubble Tea, Lipgloss, Chroma, JSON

- Developed cross-platform (Linux, macOS, Windows) terminal clipboard manager with Go using Bubble Tea TUI, enabling users to browse, search, and manage past clipboard history.
- Implemented JSON-backed storage, fuzzy search, auto-categorization, and syntax highlighting via Chroma, supporting up to **500-600** text/image entries with duplicate detection and export functionality.

Roam - AI Travel Planning Platform

HTML/CSS, Javascript, OpenAI API, React, Next.js, Prisma, PostgreSQL

- Engineered itinerary generator using OpenAI API with custom prompt engineering to parse preferences to generate recommendations with real-time weather and trend analysis.
- Integrated **3** external APIs (weather, attractions, travel data) to reduce page render time and improve user experience.

Collaborative Sticky Notes Application

TypeScript, React, Next.js, Liveblocks, Clerk, Docker, Prisma, PostgreSQL

- Built sticky notes application with Next.js, TypeScript, React, and PostgreSQL database integration, featuring CRUD operations for seamless note creation, editing, and deletion, supporting up to **200** notes per user.
- Enabled realtime collaboration for **20-30** concurrent users via Liveblocks; added Clerk auth and Prisma+Docker migrations.

Technical Skills

- **Programming Languages:** Python, JavaScript, TypeScript, Java, C, C++, HTML/CSS, SQL, Go, Rust
- **Frameworks & Tools:** React, Next, Node, Express, OAuth, Azure SDK, Tailwind, Flask, Git, Docker, Redis, Redux
- **Data & Cloud:** AWS, Azure, Postgres, MySQL, MongoDB, GraphQL, PyTorch, Pandas, NumPy, Scikit-learn, Tableau
- **Focus Areas:** Full-stack development, system integration and optimization, scalable distributed systems, real-time systems, RESTful & GraphQL API design, CI/CD automation, end-to-end ML pipelines, testing frameworks, security analysis