Divyanshu Gautam

Backend & AI Engineer · TypeScript, Node.js, PostgreSQL · Open-source maintainer · GSoC 2025

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SUMMARY

Backend engineer with almost three years of hands-on work on Talawa, an open-source platform that organizations use to manage members and events. I build PostgreSQL-backed GraphQL APIs, debug problems across the API, database and clients, and own features from design to release. In GSoC 2025 I redesigned recurring events to fix slow queries, timeouts and database bloat. I also build AI agents with Gemini and Composio MCP, including a HackCrux 1st-place agent that drafts email replies in a user's own writing style.

SKILLS

Backend: Node.js, TypeScript, Express, GraphQL, WebSockets
Databases: PostgreSQL (SQL), Drizzle, MongoDB, Redis
Infrastructure: Docker, AWS, CI/CD, Git/GitHub, Linux, Kubernetes
Messaging and queues: Kafka, RabbitMQ, Pub/Sub
AI: Agentic AI, RAG, vector databases, Composio MCP
Languages: TypeScript, JavaScript, Golang
Frontend: React

EXPERIENCE

Palisadoes Foundation – Talawa (open-source non-profit) · Remote

Google Summer of Code Contributor 2025 · 22 weeks

Implementing Efficient Recurring Events and Solidifying Core Features

- Rebuilt recurring events on PostgreSQL after query-time instance generation caused heap out-of-memory errors, transaction timeouts and database bloat.
- Designed a Temporal Sliding Window model: RRULE patterns stored apart from instances (rrule.js), only ~3 months of instances materialized, and the window extended by background jobs.
- Built pattern-level association inheritance for attendees, volunteers, action items and agenda items, with temporal scoping and per-instance overrides, so a series stores each association once instead of per instance.
- Supported "this instance", "this and future" and "all instances" edits by splitting series at the change date without duplicating associations.

GitHub Code Maintainer Jan 2024 – Present

- Led the PostgreSQL feature-restoration effort in Talawa Admin after the API's MongoDB to PostgreSQL migration, rebuilding event management, organization management and authentication flows.
- Set up automated documentation generation in the CI/CD pipeline and wrote TSDoc across the API and Admin repositories.
- Merged 90+ pull requests across Palisadoes repositories.

Backend & Frontend Engineering Intern Jan 2026 – May 2026

- Tracked down timezone shifts and off-by-one-day errors in all-day events and defined date-only handling that keeps timed-event fields consistent.
- Refactored core Talawa frontend features to improve maintainability.

Open Source Contributor (paid internship) May 2024 – Dec 2024

- Optimized GraphQL queries, fixed bugs and refactored code across the API and Admin.
- Implemented agenda categories and agenda items in Talawa Admin.

PROJECTS

AI-Powered Digital Twin – 1st place, HackCrux React, TypeScript, Gemini, Composio MCP

- Built an AI agent that learns a user's writing style and preferences to draft email replies, summarize content and manage their calendar, using Composio MCP for the email and calendar actions.
- Added personalized research assistance that tailors searches and summaries to each user's saved preferences.

EDUCATION

B.Tech, Computer Science (Software Engineering) – JK Lakshmipat University 2022 – 2026