

Mayank Goel

540-605-0446 | mayankg214@vt.edu | [linkedin.com/in/mayank-goel214](https://www.linkedin.com/in/mayank-goel214) | github.com/mayankgoel214 | mayank-goel.com

EDUCATION

Virginia Tech, B.S. Computer Science, minors in Cybersecurity and Mathematics Expected Dec 2026
GPA 3.60/4.00 · Dean's List (Fall 2025, Spring 2025, Fall 2024, Spring 2024) · Coursework: Data Structures & Algorithms, Computer Organization, Computer Systems, Software Design

TECHNICAL SKILLS

Languages TypeScript · JavaScript · Python · SQL · HTML/CSS · Go · Java · C · C++
Frameworks React · Next.js · React Native · Node.js · Expo · Tailwind CSS · Express.js · Angular · Django · .NET Core
AI / ML OpenAI API · Google Gemini · RAG · Prompt engineering · Realtime voice · LLM evaluation · Whisper · Text-to-speech
Data & infra PostgreSQL · Supabase · Prisma · SQLite · MongoDB · Firebase · pgvector · Redis · Flyway · TimescaleDB · Git · GitHub Actions
Practices Authentication · Row-level security · Multi-tenancy · REST APIs · Database migrations · Automated testing · Web performance

EXPERIENCE

Software Engineering Intern, Commonwealth Savers May 2026 – Aug 2026

- Proved the IRS portal infeasible at 250 records per file against 45,000 annual 1099-Q records; team took my API path
- Found the missing Software Developer TCC that would have stopped the migration, cutting open questions from 7 to 4

Connected and Automated Vehicles subteam, Hybrid Electric Vehicle Team, Virginia Tech Aug 2025 – Dec 2025

- Trained on CAV architecture and sensor fusion with VT's EcoCAR team, supporting an SAE Level 2 adaptive cruise feature

Undergraduate Research Assistant, Virginia Tech, DBWorkout Project Jan 2025 – Dec 2025

- Built Google OAuth 2.0 and Canvas API authentication with role-differentiated login for 50+ students and faculty
- Led 5 researchers building a leaderboard service on Node.js and PostgreSQL, validated with 20+ pilot users

Undergraduate Research Assistant, Virginia Tech, CodeWorld / No Blanket Jan 2025 – May 2025

- Built a software engineering support tool in Angular and Python letting non-engineers complete setup unaided

Software Development Engineering Intern, Qilin Software Lab Pvt. Ltd. May 2024 – Aug 2024

- Raised Lighthouse scores from 72 to 90+ by refactoring components and tuning assets, cutting load 1 to 2 seconds

PROJECTS

Lobbyee, *realtime voice training simulator for hotel front-desk staff* lobbyee.com
Next.js, TypeScript, Supabase, PostgreSQL, Prisma, Vercel, pipecat

- Built a realtime voice pipeline on pipecat and WebRTC, fixing a production failure caused by TURN relay selection
- Designed a multi-tenant Postgres schema with row-level security, verified by adversarial cross-tenant tests
- Maintained a 946-test suite behind six CI workflows, including 173 tenant-isolation tests and a weekly restore drill

Marquee, *WhatsApp-native AI product photography for Indian micro-sellers. Send a product photo on WhatsApp, get a brand-ready ad back in minutes* marquee.mayank-goel.com · [GitHub](#)
TypeScript, Node.js, fastify, pnpm, monorepo, PostgreSQL, Prisma

- Cut per-image latency 57% (40.6ms to 17.4ms) with byte-identical output by eliminating five redundant image decodes
- Built an AI image pipeline with Gemini to OpenAI failover, gating every result on deterministic quality checks
- Architected a pnpm monorepo of 3 apps and 10 packages: Fastify API, queue worker and Next.js storefront on Postgres

Verity, *Compliance assessment whose citations are verified, and whose retrieval is measured* verity.mayank-goel.com · [GitHub](#)
Next.js, TypeScript, RAG, IR, BM25, vector search, embeddings

- Built a 118-query retrieval eval with a held-out split; LLM reranking hit recall@10 90.6% against 84.4% for dense
- Measured equal-weight RRF cutting nDCG@10 from 0.666 to 0.383, and published the negative result
- Built span-level citation verification labelling each quote exact, near or unsupported, excluding unsupported ones

HokieHub, *Peer-to-peer marketplace for Virginia Tech students, with bidding and a grounded AI price check* hokiehub.mayank-goel.com · [GitHub](#)
Java 21, Spring Boot, JPA, Hibernate, PostgreSQL, Flyway, REST API design

- Rebuilt a marketplace backend in Java 21 and Spring Boot: JPA over five tables, boundary validation, RFC 7807 errors
- Cut a 20-row listing page from 62 SQL statements to 2 with JPA entity graphs, plus indexes the schema never defined
- Wrote 78 Mockito and Testcontainers tests over real Flyway migrations, catching eleven defects