

SARTHAK NEGI

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EXPERIENCE

Research Software Developer II

January 2025 – Present

The Data Analytics Center, UTSA

San Antonio, TX

- DAC Inference Service: solo-designed and built a secure FastAPI gateway mediating access to a self-hosted vLLM inference service, exposing OpenAI-compatible endpoints
- Implemented dual JWT/API-key authentication and a tier-based rolling-window quota system enforced via PostgreSQL, returning standardized HTTP 429 rate-limit responses
- Architected PostgreSQL and MSSQL schemas and integrated Qdrant/ChromaDB vector databases to power production RAG pipelines
- NextDAC Portal: led a 2-developer team as architect to design and ship a full-stack Next.js platform available to UTSA's entire student, faculty, and staff population
- Built a custom Shibboleth SSO plugin (SAML), OAuth/TOTP 2FA, and a from-scratch RBAC system, while setting release and code-review standards for the team
- Designed and shipped a modular AI chat UI for Langflow-based agents, improving prompt-complexity handling by 2x
- Led interviews for 15+ graduate hires and mentored new contributors across backend and DevOps

Undergraduate Researcher

March 2023 – December 2024

The Data Analytics Center, UTSA

San Antonio, TX

- Created an LDAP microservice to centralize and improve authentication and user management across internal services
- Published an internal Python package with 50+ unit tests (100% coverage), boosting developer productivity by 50%
- Co-developed a full-stack analytics dashboard (React, FastAPI, PostgreSQL) used to track and visualize research data
- Built 12+ scrapers/parsers for ingesting research data across 5+ sources

EDUCATION

The University of Texas at San Antonio

Aug. 2021 – December 2024

Bachelor of Science in Computer Science (conc. in Software Engineering and Data Science)

GPA: 3.86 (Major: 3.97)

- Awards: Distinguished Presidential Scholarship, President's List, Honor Roll
- Relevant coursework: Data Structures, Systems Programming, Analysis of Algorithms, Database Systems, Computer Organization, Secure Software Development, Software Engineering

PROJECTS

Zyphircom - Cron-as-a-Service Platform | [GitHub](#) | *NestJS, PostgreSQL, Drizzle ORM, BullMQ, Redis*

2026

- Architected a distributed cron-as-a-service platform, decoupling the NestJS API from BullMQ/Redis workers to enable independent scaling and reliable execution
- Engineered fault-tolerant scheduling using idempotent schedulers, row-level locking, compensating rollbacks, and backoff retries, eliminating race conditions, duplicate runs, and orphaned schedules
- Designed the PostgreSQL schema and secured the API using JWT auth, bcrypt hashing, and ownership-based authorization for strict per-user data isolation
- Built a reusable logging library with DB-persisted error logs, context enrichment, and a global exception filter, enabling full per-execution audit trails

Rowdy CyberCon | [GitHub](#) | *Next.js, TypeScript, tRPC, Drizzle/Turso, Clerk, Vercel, Cloudflare, AWS SES*

2026

- Solo-built an open-source hackathon codebase into a production event-management platform serving 400+ live attendees at UTSA's Rowdy CyberCon
- Designed a custom RBAC system using 32-bit permission bitmasks to gate admin actions across 5 attendee role types (students, professionals, organizers, volunteers, presenters)
- Built an end-to-end QR check-in → points → weighted-affle pipeline on a type-safe Next.js/tRPC/Drizzle stack
- Managed production deployment on Vercel, domain/DNS on Cloudflare, and object storage via Cloudflare R2
- Architected a single-source-of-truth config package, enabling the platform to be re-themed and redeployed for future conference iterations by editing one file

Guardian Wheels — 1st Place, HackUTD 2023 | *Python, FastAPI, AWS, Arduino, MySQL, Twilio*

November 2023

- Built the REST API orchestrating a drone-activated, AI-powered motion-tracking system across hardware and frontend, with logs persisted to AWS S3/MySQL; won 1st place at HackUTD, North America's largest student-run hackathon

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, C, SQL

Backend: FastAPI, Flask, NestJS, Node.js, Express.js, Next.js, tRPC, SQLAlchemy, BullMQ, REST APIs

Databases: PostgreSQL, Microsoft SQL Server, MySQL, MongoDB, Redis, Qdrant, ChromaDB, Turso

Security & Auth: JWT, OAuth, SAML (Shibboleth SSO), TOTP 2FA, RBAC, LDAP, bcrypt, API rate limiting

Cloud & Tools: AWS (S3, RDS, SES), Azure, Vercel, Cloudflare (R2, DNS), Docker, Git, CUDA, Pytest, Selenium