Satyal Yadav

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Professional Summary

Software engineer building backend services, AI/MCP tools, and full-stack products across Java, Python, TypeScript, React/Next.js, SQL, and cloud deployments. Recent work spans satellite simulation, natural-language document search, and Cloudflare-backed apps.

Education

Arizona State University — Tempe, AZ
Master of Science in Computer Science, GPA: 3.58/4.00 — *Expected December 2026*

Arizona State University — Tempe, AZ
Bachelor of Science in Computer Science, Minor in Business, GPA: 3.90/4.00 — *May 2025*

Work Experience

Research Developer — August 2025 – Present
Collective Design Lab (CoDe), Arizona State University — *Tempe, AZ*

- Improve open source satellite mission visualization tools by smoothing CesiumJS ground-track displays and standardizing telemetry formats for clearer coverage and scenario analysis.
- Build a Python Model Context Protocol server around TAT-C and CelesTrak so LLMs can search satellites, fetch TLE metadata, and generate ground-track telemetry.

Software Engineer Intern — June 2025 – August 2025
Opportunity Hack — *Remote*

- Built a Google Drive Model Context Protocol server for a document assistant that enabled natural-language search over hundreds of scattered files.
- Engineered a React chat interface that surfaced Drive results in a conversation-style workflow, helping non-technical users find and clean up scattered files through chat.

Undergraduate Research Assistant — August 2024 – May 2025
Collective Design Lab (CoDe), Arizona State University — *Tempe, AZ*

- Developed a Python/Skyfield satellite simulation system using public catalogs like CelesTrak for interactive visualization and analysis of 13,000+ Earth-orbit satellites.
- Built a CesiumJS viewer with RabbitMQ and Docker services to stream satellite positions to the browser for research simulation runs.

Projects

Clover Cloud File Storage App | *Next.js, TypeScript, Cloudflare Workers, D1, R2, Vercel* — 2025 – 2026

- Built a cloud file storage app with private R2-backed uploads, preview, download, rename, share, delete, storage usage, and recent-file workflows.
- Designed a split Next.js/Cloudflare Worker architecture for email OTP auth, hashed sessions, D1 metadata/sharing records, upload validation, object authorization, backup tooling, and stale upload cleanup.

Spotify Music Recommender | *Spring Boot, React/TypeScript, PostgreSQL, Spotify API, Last.fm, Docker* — 2025

- Built a Spring Boot/React music recommendation app that generates 5-50 tracks from a Spotify seed by mapping Last.fm similarity data into Spotify's catalog.
- Added Spotify OAuth, playback, playlist-save flows, PostgreSQL caching, MusicBrainz tag ranking, retry/rate-limit protections, and integration tests for recommendation flows.

Technical Skills

Programming Languages: Java, Python, TypeScript, JavaScript, C++
Frontend: React.js, Next.js, Vite, TailwindCSS, HTML, CSS
Backend & Databases: Spring Boot, Node.js, Express.js, Flask, FastAPI, PostgreSQL, RabbitMQ, REST API
Cloud & DevOps: AWS, Cloudflare, Vercel, Docker, CI/CD, Git
AI Tools: OpenAI API, Model Context Protocol, Cursor, Codex, Claude Code, opencode
OS: Windows, macOS, Linux