

ALEJANDRO DIAZ PAREDES

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PROJECTS

Starview - Full-Stack Astronomy Platform | <https://www.starview.app> | <https://www.github.com/adiazpar/starview>

Django, React, PostgreSQL/PostGIS, Redis Caching, TanStack Query, Mapbox API, AWS, Cloudflare

Core Platform

- Architected and shipped a 48,000-line production codebase with 16 database models, **40+ REST API endpoints**, and 66 React components serving a community of stargazers worldwide.
- Achieved **99.3% query reduction** (548 to 4 queries) through strategic ORM optimization, cutting page load times by 85%.
- Earned A+ security rating (securityheaders.com) with **CSP, HSTS, rate limiting, audit logging, and OAuth 2.0 flows**
- **PostGIS** spatial queries for distance-based filtering with great-circle calculations and optimized map clustering for 1,000+ markers.
- Astronomy calculation services integration PyEphem for lunar cycles and raster for processing World Atlas GeoTIFF light pollution data.
- Implemented TanStack Query patterns with optimistic updates, multi-cache invalidation across 8+ related queries, and automatic rollback on errors.
- Integrated 5 external APIs (Mapbox, Open-Meteo, AWS SES, Cloudflare R2, OpenRouteService).
- Implemented **i18n for 8 languages** and **24-badge gamification system** with event-driven automatic rewards.

Observatory Data Pipeline (ETL System)

- Designed **distributed ETL pipeline** ingesting 3,484+ observatories from Wikidata SPARQL with checkpoint-based crash recovery.
- Implemented **deduplication system** handling Unicode normalization, coordinate precision matching, and database constraints.
- Built **AI-powered image validation** using Chrome DevTools MCP for visual inspection on real images for each observatory.
- Created soft 404 detection with 23 multi-language regex patterns and fallback URL search via Wikimedia Commons API.

AI-Assisted Development

- Created reusable **Claude Code agent framework** with event-driven hooks for documentation automation.
 - Designed 8 custom AI skills including the observatory orchestrator with sub-agent coordination.
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RELEVANT SKILLS

- Solid understanding of **Object Oriented Programming**, and “software as a service” concepts using **Agile**.
 - (*Tools*) Git CLI, GitHub
 - (*Languages*) Python, HTML, CSS, JavaScript, Java
 - (*Frameworks*) Django, Rest Framework, PostgreSQL, AWS
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EXPERIENCE

Mikron Automation, Controls Engineer Intern, 2024

Englewood, CO

- Developed ladder logic automation following Rockwell standards for manufacturing systems.

University of Colorado Colorado Springs, It Technician I, 2023 - 2025

Colorado Springs, CO

- Resolved 20+ daily service tickets using Azure AD and Intone for 15,000+ university users.

Uber - Independent Contractor, May 2025 - Present

CO

- Ensuring the safe passage of 20+ passengers daily to their destinations.
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EDUCATION

University of Colorado Colorado Springs

Colorado Springs, CO

Bachelor of Science in Computer Science, Software Engineering

SUMMARY

Full-stack software engineer specializing in modern web applications with Django, React, and cloud infrastructure. Built and shipped Starview, a production astronomy platform with 48k+ lines of code, A+ security grade on securityheaders.com, and 8-language support. Experiences in Ai-assisted development workflows using Claude Code.
