

James Freeborn

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Software Engineer at NASA · Building Astrelo (AI sales intelligence) · C#/.NET, React, PostgreSQL, AWS

EXPERIENCE

Software Engineer – NASA (SAIC Contract)

Jun 2022 – Present

- Built an Engineering Work Order System for AFRC and JSC centers, replacing a manual SharePoint process with automated multi-level approvals, role-based authorization, inspector stamps, and digital signing.
- Developed FSA (Flight Scheduling Application), used by every NASA center for pilot and astronaut flight tracking — featuring timezone conversion, Teams calendar integration, currency tracking with color-coded expirations, and PIF management.
- Built a C# data migration tool to consolidate production data from multiple centers into a unified schema, and designed optimized SQL databases reducing query execution time by 40%.
- Ship features within Agile/Scrum sprints using .NET, C#, Blazor, and SQL, serving 500+ engineers, schedulers, and flight operations staff.

Database Administrator – Modja Pro IT Solutions

Jan 2022 – Mar 2022

- Designed and built SQL Server databases from scratch, writing T-SQL for transactions, stored procedures, and query optimization.
- Managed backup and recovery procedures including snapshots, transaction log management, and restore testing.

Application Support Intern – Bankers Healthcare Group

May 2020 – Oct 2021

- Triaged and resolved production tickets through JIRA and Salesforce, achieving the highest individual ticket completion rate company-wide in 2020 — outperforming full-time analysts.
- Communicated database transaction details directly to DBAs and used SQL Server to diagnose data inconsistencies across production systems.
- Led daily Scrum meetings, identified blockers, and drove cross-team resolution as the only intern operating at a full-time contributor level.

PROJECTS

Astrelo – Technical Founder – *astrelo.ai*

- Built a full-stack AI sales intelligence platform (Next.js, React, PostgreSQL, AWS) that analyzes closed deal patterns to score, prioritize, and automate outbound B2B pipeline.
- Designed a proprietary ML scoring engine with NAICS embeddings, a 56-table multi-tenant PostgreSQL schema (68+ endpoints, JWT auth, Redis caching), and Cosmo — an LLM assistant with 40+ tools for email drafting, competitive analysis, and CRM automation.
- Engineered real-time HubSpot/Salesforce webhook pipelines (12 trigger types with dedup). Deployed on AWS (Amplify, EventBridge, Aurora) with 15 automated cron workflows.

Claude Code Auto-Pipeline – Open Source

- Built an open-source CI/QA pipeline orchestrating 41 AI agents across 12 phases — each phase runs as an isolated subprocess (solving a Bun runtime memory leak at 1.35GB RSS). Deterministic grep-based validators gate every phase, eliminating AI self-assessment bias.
- Designed model routing that reserves strong models for design/review only, cutting per-run cost by 70%. Built adversarial review with auto-revision loops, drift detection, OWASP scanning, and a real-time WebSocket pixel-art visualization.

EDUCATION

B.S. Computer Information Systems – University of Houston

Minor: Technology Management

SKILLS

Languages & Frameworks: C#, .NET, Blazor, T-SQL, JavaScript, TypeScript, React, Next.js

Data: SQL Server, PostgreSQL, Redis, Database Design, Query Optimization, ETL

Cloud & Tooling: AWS (Amplify, Aurora, EventBridge, EC2, Route 53), Git, VS Code, Postman, Swagger, JIRA

Practices: Agile/Scrum, REST APIs, JWT Auth, CI/CD, Webhooks, Cron Jobs, Security Best Practices