

Ardeshir Beheshti

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Portfolio & project writeups: ardybeheshti.com

SUMMARY

Software engineer with 10+ years shipping production systems, including AI-powered features and agentic automation, for real users across enterprise, startup, and cross-functional stakeholder environments. Built and shipped an internal **agentic workflow platform ("Agent Flywheel")** automating multi-step engineering tasks, and a **computer-vision pipeline reaching ~98% accuracy** on field survey automation, both taken from problem definition through production. Comfortable owning ambiguous problems end-to-end: scoping with non-technical stakeholders, prototyping fast with AI-assisted tooling (Claude, LLM APIs, agents), and hardening what works into reliable services. Full-stack range across Python and JavaScript/TypeScript, REST APIs, SQL/PostGIS, and cloud infrastructure (AWS, Docker, Kubernetes, Terraform).

EXPERIENCE

Lead GIS Software Engineer — Cedar, San Diego, CA

March 2026 – Present

- Designed and built "**Agent Flywheel**," an **internal agentic workflow system** using LLM APIs to automate multi-step engineering and data-processing tasks — an AI-powered feature taken from prototype to daily production use by the engineering team.
- Led the architecture, design, and development of a nationwide geospatial platform supporting permitting, site selection, and land development workflows, integrating point cloud, survey, and parcel datasets into a unified environment.
- Designed scalable REST APIs, backend services, and automated pipelines integrating Regrid, ArcGIS, Mapbox, and public geospatial datasets, performing coordinate system validation and geospatial alignment across sources.
- Expanded nationwide jurisdiction coverage by 67% (15 → 25 cities) while reducing end-to-end processing time by 55% (55 → 25 minutes).
- Partnered directly with engineering leadership and business stakeholders to translate ambiguous requirements into shipped features; established architecture standards, code review, and testing practices; mentored engineers and interns.

Senior Backend Engineer — Urban SDK, Remote

September 2025 – March 2026

- Designed, implemented, and evolved production geospatial REST APIs supporting routing, transportation analytics, and enterprise customer workflows, working directly with stakeholders to translate business needs into features.
- Built production analytics pipelines using FastAPI, PostGIS, NetworkX, and Polars.
- Reduced API response times from 20+ seconds to 3–5 seconds through caching strategies, query optimization, and graph serialization.
- Built automated regression testing frameworks — golden-set style checks — ensuring consistent analytics results across releases.

Senior Software Engineer – Geospatial — Pearce Renewables, Remote

September 2024 – September 2025

- Built and shipped a **computer-vision pipeline automating field survey classification at ~98% accuracy**, replacing a manual review process — an AI-powered feature used daily in production by field operations.
- Architected cloud-native geospatial pipelines processing over 60,000 operational field records nightly using Python, FastAPI, PostGIS, Spark, and PostgreSQL.
- Improved processing performance by 40% through pipeline optimization.
- Built monitoring and alerting systems across multiple production services using Docker, Kubernetes, Terraform, and AWS.

Lead Geospatial Developer — EDF Renewables, San Diego, CA

February 2019 – August 2024

- Led development of enterprise GIS platforms supporting over 200 renewable energy sites across North America, incorporating LiDAR and survey-derived terrain data into site engineering and planning workflows.
- Designed large-scale spatial data pipelines managing over 10TB of operational, telemetry, and simulation data across a distributed engineering team.
- Built cloud-native backend services using Python, JavaScript, PostGIS, Delta Lake, Snowflake, AWS, and distributed processing technologies.
- Reduced annual cloud infrastructure costs by \$250,000 through architecture optimization and data lifecycle improvements.

- Mentored junior engineers in database optimization, testing strategies, CI/CD, and software engineering best practices.

Geospatial Developer — *AECOM, San Diego, CA*

August 2017 – January 2019

- Developed enterprise GIS applications supporting FEMA and Department of Defense emergency response programs, incorporating LiDAR and point cloud survey data into spatial databases.
- Built geospatial web applications using Django, JavaScript, PostGIS, and Leaflet.
- Automated spatial reporting workflows, reducing report generation time by 75%.

SKILLS

AI & Automation: LLM APIs, Prompt Design, Agentic Workflow Systems, AI-Assisted Development (Claude), Computer Vision, Evaluation/Regression Testing

Software Engineering: Python, JavaScript/TypeScript, REST APIs, FastAPI, SQL, PostgreSQL, PostGIS, Git, API Design, Data Modeling

Cloud & DevOps: AWS, Docker, Kubernetes, Terraform, CI/CD, GitHub Actions

GIS & Digital Twin: ArcGIS Enterprise, ArcGIS REST APIs, LiDAR & Point Cloud Integration, Mapbox, Cesium, Spatial ETL, GDAL

Collaboration: Cross-Functional Stakeholder Partnership, Technical Documentation, Mentorship, Agile/Scrum

EDUCATION

San Diego State University — Bachelor of Science, Computer Science with GIS Emphasis

San Diego, CA • August 2012 – May 2017