GEOKNIGHT GIS · FOUNDER

Christopher M. Knight

Geospatial Data Engineer · GIS Analyst · Data QA/QC

30.33° N, 81.66° W · Jacksonville, FL · U.S. Military Veteran

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PROFILE

Founder of GeoKnight GIS, delivering county-wide address data QC and GIS/data services for Florida governments. Former GS-13 Geographer (U.S. Army Geospatial Center) with 23+ years building and validating authoritative spatial data. Builds repeatable Python/SQL pipelines into PostGIS and DuckDB with automated geometry validation, deduplication and QC traceability, and exposes spatial data to AI agents through custom MCP servers.

FEATURED PROJECTS

Jacksonville Property AI Agent (jax-property-mcp)

`Python, MCP, PostGIS, dbt, Ollama`

- Built a Python MCP server (6 tools incl. FEMA flood-risk overlay) over 405k Duval County assessor records in PostGIS, used by a local Ollama agent and VS Code Copilot.
- Fault-tolerant loads with completeness checks: FEMA flood zones 12,288/12,288 (0 lost), FL DOR sales 75,878/75,878 (99.8% matched to parcels); 10,552 duplicate addresses removed with QC traceability.
- Cleaned and joined data in tested dbt models (13 data tests on every dbt build); built tool-choice evaluation scripts to benchmark local LLMs.

SJRWMD Open Data Mirror (sjrwmd-open-data) and GeoData QC Inspector (sjrwmd-geodata-qc)

`PostGIS, PMTiles, GeoParquet, ArcGIS REST, Leaflet`

- Harvested 15 SJRWMD layers (727,495 features) from ArcGIS REST into PostGIS, verified every load against server feature counts, and published PMTiles maps plus GeoPackage/GeoParquet/CSV downloads.
- Built rule-driven QA/QC (8 configurable rules) for 850 groundwater stations, producing 940 auditable findings and a Leaflet review dashboard.

Jacksonville Property Intelligence (jax-property-intelligence)

`Python, PostgreSQL/PostGIS, GeoPandas, Leaflet`

- Profiled and loaded Duval County parcels, Property Appraiser tax roll and addresses into PostGIS (EPSG:2236), repairing invalid geometry with make_valid and reporting invalid/missing counts before load; source never modified.
- Published a static Leaflet explorer of Riverside parcels on GitHub Pages.

Census Data Pipeline (census-pipeline)

`Python, Census API, DuckDB, dbt, MCP`

- Ingests ACS 5-year data for Florida's 67 counties with retries and quality gates, loads idempotently into DuckDB, and transforms with tested dbt models (incl. a county-to-state reconciliation test); governed metrics served to AI agents via a read-only MCP server.

GeoRescue (georescue)

`Python, GeoPandas, Shapely, DuckDB, MCP`

- Prototype that inspects parcel layers for invalid geometry, duplicates, CRS problems, overlaps, slivers and gaps; proposes repairs on a copy with a before/after changelog.

EXPERIENCE

Founder 2026 - Present

GeoKnight GIS | Jacksonville, FL (knightchrism.github.io | X @geoknight0015)

- Provide Florida county-wide address data QC and GIS/data services built on open-source Python, PostGIS and DuckDB tooling.
- Built GeoRescue, a parcel data-quality tool that flags geometry, duplicate and overlap errors and proposes logged repairs without altering source data.
- Published public QA/QC and data products for Northeast Florida (SJRWMD station QC, Duval County parcel database and map explorer).

Physical Science Technician (Term) May 2026 - Aug 2026

NOAA Office of Coast Survey, Navigation Response Team | Gulfport, MS

- Supported shallow-water hydrographic surveys (3+ operations) for nautical-chart updates: equipment installation, calibration, field collection, processing and geospatial QA/QC.
- Processed and analyzed multibeam/survey data to identify quality issues; authored survey reports and SOPs.
- Designed and deployed a real-time Esri dashboard integrating environmental data for emergency-response decisions.

GIS / Data Integration Specialist Apr 2025 - Nov 2025

Command Holdings, supporting HQ U.S. Special Operations Command | MacDill AFB, FL

- Managed enterprise GIS content, services, applications and user access across multi-network ArcGIS Enterprise 11.3 and ArcGIS Online environments for 1,500+ users.
- Developed 20+ ArcGIS Dashboards, Experience Builder apps, site pages and Survey123 solutions.
- Ingested and integrated complex datasets into ArcGIS Enterprise with developers and system administrators; troubleshot data and application issues.

Geographer (GS-13), FAA Part 107 Remote Pilot Jun 2016 - Mar 2025

U.S. Army Geospatial Center | Alexandria, VA

- Developed, validated and delivered authoritative geospatial datasets (imagery, elevation, LiDAR, terrain) with Esri and specialized software; supported QA and geodatabase workflows.
- Led 90+ airborne remote-sensing/LiDAR collection missions and 71+ sUAS missions; managed 100+ TB of data for 150+ customers.
- Delivered 2-8 cm imagery, elevation data and 3D mesh models; wrote the sUAS business plan, SOPs and workflows.
- Coordinated analysts, engineers, program managers and stakeholders on requirements, data issues and delivery schedules.

Senior Geospatial Analyst / Production Manager Jan 2014 - Jun 2016

U.S. Army Geospatial Center, Military Support Team | Alexandria, VA

- Processed and analyzed 90+ LiDAR point-cloud datasets; produced 50+ geospatial products.
- Standardized ~25,000 Topographic Line Maps with NGA for high-volume production; managed schedules and QA standards.

Senior Geospatial Analyst / NCOIC Jan 2011 - Jan 2014

25th Combat Aviation Brigade, U.S. Army | Wheeler Army Airfield, HI

- Led a five-person team answering 1,200 RFIs and producing 2,000+ imagery/geospatial products supporting 800+ flight operations.

Earlier: Geospatial Engineer, U.S. Army (4th Infantry Division; Joint Task Force North), Oct 2002 - Jan 2011.

TECHNICAL SKILLS

GIS platforms

ArcGIS Pro, ArcGIS Enterprise 11.3, ArcGIS Online, Dashboards, Experience Builder, Survey123, Field Maps, QGIS, Leaflet

Geospatial engineering

PostGIS, spatial SQL, GeoPandas, Shapely, Rasterio, GeoParquet, PMTiles, geometry validation & repair, CRS/projections

Data engineering

Python, SQL, dbt (models & tests), DuckDB, PostgreSQL, API ingestion with retries, automated QA/QC, deduplication, Git/GitHub

AI-enabled workflows

Model Context Protocol (MCP) servers, LLM tool calling, agent evaluation, Ollama, GitHub Copilot

Remote sensing & field

LiDAR, elevation/terrain, imagery, photogrammetry (Pix4D, ContextCapture), Global Mapper, ENVI, QT Modeler, sUAS, Trimble R12i/Topcon GPS, hydrographic survey

EDUCATION & CERTIFICATIONS

Education

- B.S. Data Analytics (Project Management for STEM), Southern New Hampshire University - in progress
- Geography (B.S. track), Arizona State University Online - 123 credit hours completed
- Computer Technology coursework, DeVry University Online
- Geospatial Engineer coursework, Esri & National Geospatial-Intelligence College

Certifications

- FAA Part 107 Remote Pilot
- Geospatial Intelligence Fundamentals Certified (GPC)