

RADLEY CIEGO

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EXPERIENCE

R&D Geospatial Data Engineer II | Oak Ridge National Laboratory

Jan 2024 – Present

- Engineered a fault-tolerant national Census TIGER/Line ingestion pipeline for an NIEHS/NIH-funded environmental health and exposomics data program, processing 15 years of road-network data across 3,200+ U.S. counties annually and reducing failed-job recovery from hours to seconds through checkpointed, idempotent processing
- Designed and executed a high-performance pipeline converting 282GB across 54,000+ hourly weather-station files into analysis-ready Parquet for environmental exposure research, leveraging parallelized Polars workflows on ORNL HPC infrastructure with automated schema and data-quality validation
- Built a Prefect-orchestrated ETL framework to ingest and standardize heterogeneous exposomic datasets into catalog-aligned, Hive-partitioned, zstd-compressed Parquet, enabling reproducible data access across cross-institutional research teams
- Developed a compound vulnerability framework for electric vehicle supply equipment (EVSE) resilience under natural disasters for DOE CESER, integrating geospatial risk analysis, agent-based routing simulation, and stakeholder validation while architecting a modular, hazard-agnostic platform for real-time forecast integration and national-scale deployment
- Contributed production bug fixes and data-engineering improvements to EAGLE-I, ORNL's national electric-grid monitoring platform supporting situational awareness of power outages and infrastructure disruptions

Mapping and Spatial Records Specialist | NYC Department of City Planning

Feb 2023 – Jan 2024

- Maintained New York City's official City Map and Zoning Map geospatial datasets, incorporating approved rezonings, City Map amendments, and other legally adopted mapping changes across all five boroughs
- Supported the modernization of century-old sectioned City and Zoning Maps into seamless citywide GIS datasets, applying spatial data-quality and governance standards to authoritative municipal records
- Prepared and reviewed geospatial materials for zoning and City Map actions throughout the land-use public-review process, supporting community boards, borough presidents, the City Planning Commission, and City Council

Topographic Engineer & Planner | Office of the Bronx Borough President

Jun 2021 – Feb 2023

- Managed core functions of the Bronx Topographic Bureau under NYC Charter §82(3), maintaining official borough mapping records and reviewing engineering drawings, surveys, and development plans affecting the City Map
- Reviewed and processed City Map alterations, street mapping actions, and related land-use applications through the ULURP process, coordinating with city agencies, engineers, architects, developers, and community stakeholders
- Assigned and verified street addresses for Bronx development projects and determined legal street status, mapped dimensions, and right-of-way conditions to support permitting, infrastructure improvements, and municipal records

Area Manager, Industrial Business Zone | Long Island City Partnership

Jan 2020 – Jun 2021

- Produced GIS analyses and property intelligence using NYC open data to support industrial business outreach, infrastructure planning, and neighborhood operations across the Long Island City Industrial Business Zone
- Coordinated streetscape, infrastructure, and quality-of-life issues across NYPD, NYC DOT, DSNY, DOB, SBS, MTA, LIRR, and Community Board 2, serving as a primary liaison between businesses and public agencies

TECHNICAL SKILLS

Geospatial Engineering: GeoPandas, GDAL/OGR, Rasterio, Shapely, PyProj, Fiona, PostGIS, ArcGIS Pro, ArcMap, QGIS, GeoParquet, GeoTIFF/COG, spatial ETL, raster/vector processing

Data Engineering: Python, SQL, Polars, Pandas, PyArrow, DuckDB, PostgreSQL, Prefect, Apache Airflow, ETL/ELT pipeline design, Parquet/zstd, Hive partitioning, schema normalization & versioning

Distributed & Cloud Infrastructure: Apache Spark, Apache Sedona, Docker, Docker Compose, Kubernetes (k9s), HPC, RustFS / MinIO, S3-compatible object storage, AWS S3 API, Git

Modeling & Applied Analytics: SUMO, GTFS, evacuation modeling, infrastructure resilience analysis, Scikit-learn, fuzzy matching/record linkage, PyTorch

Visualization & Applications: Kepler.gl, Matplotlib, Next.js, React, TypeScript, Three.js, interactive geospatial visualization

Platform & Architecture: Cloud-native geospatial architecture, data quality validation, composite index design, reproducible workflows, distributed-system debugging, stakeholder-driven metric design

EDUCATION

Master of Science, Geoinformatics CUNY Hunter College	Expected Dec 2026
Advanced Certificate, Geographic Information Systems (GIS) CUNY Hunter College	2022
Bachelor of Arts, Political Science Fordham University	2019
Language & Culture Program – Morocco Council on International Educational Exchange, Rabat, Morocco	2018
Summer Arabic Language Program Council on International Educational Exchange, Amman, Jordan	2018

PUBLICATIONS & DATASETS

Ciego, R. (2024). Assessing Electric Vehicle Charging Infrastructure Gaps During Catastrophic Climate Events: A Case Study of Hurricane Ian and Implications for Future Resilience. AGU Fall Meeting 2024, Washington, D.C. Abstract NH51E-2467.

EAGLE-I Power Outage Data 2025. Oak Ridge National Laboratory, Feb 2026. doi:10.13139/ORNLNCCS/3012826

EAGLE-I Power Outage Data 2024. Oak Ridge National Laboratory, Apr 2025. doi:10.13139/OLCF/2500278

LANGUAGES

English (native) | Arabic (intermediate) | Spanish (intermediate)