

PROFESSIONAL SUMMARY

Senior Software Engineer with 21 years building scalable geospatial data platforms, web applications, and distributed analytical systems. Expert in full-stack development with deep specialization in Apache Spark/Sedona for big data geospatial processing. Proven track record architecting multi-tenant SaaS platforms used by thousands of analysts, implementing ETL pipelines processing billions of geospatial records, and building production systems integrating ESRI, OSGeo, and SAFE FME technologies. Strong background in both enterprise consulting and startup environments, with experience leading engineering teams and delivering mission-critical geospatial applications.

KEY ACHIEVEMENTS AND IMPACT

Geospatial Platform Development

- Architected redistricting platform used by thousands of analysts nationwide with real-time collaborative editing and Census integration
- Built boundary estimation system achieving accurate geospatial results without machine learning using advanced PostGIS algorithms
- Developed econometric simulation platform with NetLogo multi-agent modeling and web interface
- Created comprehensive survey platform managing complete research lifecycle with integrated geospatial market segmentation

CORE COMPETENCIES

Programming & Development: *Python* (Django/GeoDjango, Flask, Pandas, PySpark, NumPy, SciKit-Learn); *JVM* (Scala (Spark/Sedona), Java (GeoTools, enterprise applications), Groovy); *Web Technologies* (JavaScript, React, d3.js, OpenLayers, jQuery, HTML/CSS); *Database Languages* (SQL, T-SQL, PostgreSQL/PostGIS, Oracle, MySQL); *Statistical/Analysis* (R, SPSS, NetLogo (agent-based modeling))

Big Data & Geospatial Platforms: *Apache Spark* (PySpark, Spark SQL, Sedona (geospatial), distributed processing); *Geospatial Stack* (PostGIS, ESRI ArcGIS, Quantum GIS, GRASS, OSGeo, SAFE FME); *Cloud Platforms* (AWS (EC2, RDS, S3), Snowflake, Google Cloud, Microsoft Azure); *Data Engineering* (ETL/ELT pipelines, dbt, Hadoop, Informatica, CDAP); *Databases* (PostgreSQL/PostGIS, Oracle, MongoDB, Neo4j, MySQL)

Software Architecture & DevOps: *Distributed Systems* (Multi-tenant SaaS, microservices, API design, scalability); *Geospatial Applications* (Spatial algorithms, boundary estimation, clustering analysis); *Web Applications* (Full-stack development, RESTful APIs, real-time collaboration); *DevOps* (Docker, Vagrant, CI/CD (GitLab, GitHub), Celery, Airflow, nginx); *Integration* (Twilio API, WMS tile servers, CRM/DMP integration, OAuth)

PROFESSIONAL EXPERIENCE

Siege Analytics, Washington, DC | PARTNER January 2014 – Present

Geospatial Platform Architecture and Full-Stack Development

- Architected and engineered redistricting platform serving thousands of analysts
- Developed boundary estimation microservice using incomplete data for boundary estimation
- Built scalable ETL pipelines using PySpark and Sedona processing billions of records

Helm/Murmuration, Washington, DC | DATA PRODUCTS MANAGER 2012 – 2014

Geospatial Solutions and Software Development

- Developed geospatial analysis frameworks and mapping applications for electoral analysis
- Built custom visualization tools and interactive dashboards for client presentations
- Architected data processing pipelines for large-scale demographic and geographic data

Mautinoa Technologies, Washington, DC | SOFTWARE ENGINEER 2010 – 2012

Data Product Development and Engineering Leadership

- Led development of data-driven solutions and platform architecture for political campaigns
- Managed cross-functional engineering teams building campaign management and voter outreach systems
- Designed and implemented scalable data platforms using Python, Django, and PostgreSQL

Myers Research, Washington, DC | SENIOR ANALYST 2008 – 2010

Campaign Technology and Analytics Development

- Developed voter targeting models and demographic analysis tools using Python ...
- Built web applications for campaign data visualization and reporting
- Created data integration systems connecting multiple campaign data sources

Salsa Labs, Inc., Washington, DC | SOFTWARE ENGINEER 2004 – 2006

Political Technology Development

- Developed software solutions for political campaigns and advocacy groups usin...
- Built web applications for voter engagement and campaign management
- Integrated third-party APIs and data sources for campaign tools

The Praxis Project, Oakland, CA | INTERIM TECHNOLOGY MANAGER 2002 – 2004

Nonprofit Technology Integration and Development

- Developed data management systems and web applications for social justice org...
- Built custom applications for community engagement and advocacy using PHP and...
- Provided technical training and support to nonprofit staff

Lake Research Partners, Washington, DC | PROGRAMMER 2001 – 2002

Political Research and Data Analysis Tools

- Developed data analysis tools for political polling and research using Python...
- Built statistical models and data visualization tools for research presentations
- Created automated reporting systems for survey data analysis

The Feldman Group, Washington, DC | FIELD DIRECTOR 2000 – 2001

Political Field Operations and Data Management

- Developed data collection and management systems for field operations
- Built databases and reporting tools for campaign field work
- Trained field staff on data collection protocols and quality control