

PROFESSIONAL SUMMARY

Data scientist and software engineer with 15+ years building systems that matter. Discovered systematic demographic coding errors affecting all Black and Asian-American voters, developed geospatial ML algorithms improving classification accuracy from 23% to 64%. Saved organizations \$4.7M through better algorithms, and built platforms used by thousands of analysts nationwide. Expert in translating complex analytical requirements into scalable technical solutions.

KEY ACHIEVEMENTS AND IMPACT

Discovered systematic race coding errors affecting all Black and Asian-American voters

- Algorithm reduced mapping costs by **73.5%**, saving campaigns and organizations **\$4.7M**
- Built redistricting platform used by thousands of analysts nationwide
- Achieved **87%** prediction accuracy for voter turnout vs. industry standard of **71%**

CORE COMPETENCIES

python • r • sql • javascript • java • other

PROFESSIONAL EXPERIENCE

Siege Analytics | Partner - Austin, TX 2005 - Present

Data, Technology and Strategy Consulting

- Discovered systematic race coding errors affecting all Black and Asian-American voters, developed geospatial machine learning algorithms improving demographic classification accuracy from **23%** to **64%**
- Built redistricting platform used by thousands of analysts nationwide with real-time collaborative editing and Census integration
- Achieved **87%** prediction accuracy for voter turnout vs. industry standard of **71%**, reducing polling error margins from **±4.2%** to **±2.1%**

Helm/Murmuration | Data Products Manager - Austin, TX June 2021 - May 2023

Civic Graph & Civic Pulse Director

- Conceived, architected and built Civic Graph multi-tenant data warehouse processing government data from Census, Bureau of Labor Statistics, National Council of Educational Statistics
- Built multi-dimensional data warehouse measuring socio-economic changes in America at every level across attitudinal, behavioral, demographic, economic and geographical dimensions
- Managed engineering teams of 7-11 professionals while setting technical direction for data architecture

GSD&M; | Analytics Supervisor - Austin, TX November 2019 - June 2020

Big Data Engineering Transformation

- Transformed small data team into big data engineering team, scaling from laptop datasets to Hadoop Clusters and Hive on AWS
- Managed accounts including United States Air Force, Southwest Airlines/Chase and Indeed

- Rewrote mission and offerings of department and drafted integration plan with strategy team

Mautinoa Technologies | Software Engineer - Austin, TX August 2016 - February 2018

SimCrisis Product Owner/Engineer

- Conceived, architected and engineered econometric simulation software for humanitarian crises intervention measurement
- Built SimCrisis GeoDjango web application using multi-agent modeling to create econometric simulations of crisis economies
- Designed modular application accepting rules extensions for ethnic strife, different crises/disasters, supply failures

Myers Research | Senior Analyst - Austin, TX August 2012 - February 2014

RACSO Product Owner/Engineer

- Designed comprehensive survey instruments for specialized voting segments and niche markets
- Co-developed RACSO web application managing all aspects of survey operations from instrument design to data analysis
- Wrote RFP and analyzed bids from **1,200** vendors for research platform development

PCCC | Research Director - Washington, DC 2010 - 2012

Political Research & Data Analysis (FLEEM System)

- Conceived, architected, and engineered FLEEM web application using Twilio API handling tens of thousands of simultaneous phone calls using emulated predictive dialer for regulated political surveys
- Developed IVR polling system for early quantitative research supporting Senators Martin Heinrich and Elizabeth Warren
- Built comprehensive tabular and graphical reporting system with Python, GeoDjango, PostGIS, and Apache webserver

Salsa Labs | Software Engineer - Washington, DC January 2011 - August 2011

Geospatial CRM Development

- Maintained and extended comprehensive geospatial analysis and reporting tools for Java-based CRM system used by tens of thousands simultaneously
- Developed custom tile server for Web Map Service (WMS) integration using GeoTools and OpenLayers
- Built advanced geospatial analysis capabilities using Java, JavaScript, MySQL, and TileMill

Lake Research Partners | Programmer - Washington, DC April 2008 - December 2008

Political Research & Analytics

- Built the first collaborative and multi-actor contributed poll of polls used by the Democratic Party

- Harmonized data from 20+ polling firms with incompatible methodologies and encoding systems
- Created comprehensive meta-analysis framework handling millions of survey responses that became the **\$400M** Polling Consortium Database at The Analyst Institute, now valued at **\$1B+**

KEY PROJECTS

National Redistricting Platform (2020 - 2021)

About: Cloud-based GeoDjango platform for redistricting analysis with real-time collaborative editing and Census integration, used by thousands of analysts nationwide

Technologies: GeoDjango, PostGIS, AWS, Docker, React, Python

Impact: Reduced mapping costs by 73.5%, saving organizations \$4.7M in operational expenses

FLEEM Political Polling System (2010 - 2012)

About: Completely self-built IVR system using Twilio API that contacted tens of thousands of voters daily, replicated call center functionality to performance parity

Technologies: Twilio API, Python, Django, PostgreSQL, JavaScript

Impact: Saved \$840K in operational costs plus millions in avoided software licensing

Geospatial Demographic Classification System (2013 - 2016)

About: Machine learning platform that discovered systematic coding errors and improved demographic classification accuracy from 23% to 64%

Technologies: Python, Scikit-learn, PostGIS, GeoPandas, TensorFlow

Impact: Corrected demographic data affecting all Black and Asian-American voters nationwide