

## PROFESSIONAL SUMMARY

Distinguished Polling, Research & Redistricting Professional with 15+ years of expertise in survey methodology, consumer insights, voting behavior, and advanced data analysis. Proven track record in designing and implementing comprehensive research studies, managing cross-functional teams, and translating complex data into actionable intelligence. Expert in geospatial analysis, demographic segmentation, and consumer behavior modeling with experience serving major brands, organizations, and political candidates. Regular expert testimony and source on public opinion for journalists, with redistricting analysis used in court cases.

## KEY ACHIEVEMENTS AND IMPACT

Conceived and deployed redistricting software used by thousands of analysts nationwide

## CORE COMPETENCIES

Software Engineering • Data Engineering • Data Analysis • Geospatial / Demographic Expertise • Research & Analytics • Programming & Development • Data Infrastructure

## PROFESSIONAL EXPERIENCE

### Siege Analytics, Washington, DC | PARTNER 2005 – Present

#### Data, Technology and Strategy Consulting

- Uncovered decades of demographic miscoding in voter files, discovering 500,000+ previously mischaracterized Democratic voters
- Developed Python boundary estimation algorithm enabling mapping and analysis at every level of election in the United States
- Algorithm reduced mapping costs by 75%, saving campaigns and organizations \$5M+ and enabling smaller nonprofits to conduct redistricting analysis
- Lead comprehensive polling and research studies for presidential, gubernatorial, congressional, and senatorial campaigns affecting millions of dollars in strategic spending decisions
- Architect enterprise-scale cloud data warehouse solutions on AWS (EC2, RDS, S3) processing millions of records with millions of columns for electoral analytics and demographic analysis
- Design and implement scalable ETL pipelines using PySpark, dbt, and PostgreSQL/PostGIS for large-scale geospatial and demographic datasets
- Develop advanced analytical tools and machine learning algorithms using Python, Pandas, NumPy, and Scikit-learn for fraud detection and spatial clustering
- Manage strategic client relationships across political, nonprofit, and technology sectors using Django/GeoDjango web applications
- Drive technical architecture decisions for data-intensive applications using Docker, Git, and modern DevOps practices

### Helm/Murmuration, Washington, DC | DATA PRODUCTS MANAGER June 2021 – May 2023

#### Data Platform Development and Team Leadership

- Conceived and developed comprehensive data framework using Python, Pandas, and PostgreSQL to clean, validate, and normalize government data from Census, BLS, and NCES
- Architected and built multi-tenant data warehouse and data lake using Snowflake, dbt, and AWS processing millions of records with millions of columns for longitudinal analysis across attitudinal, behavioral, demographic, economic and geographical dimensions

- Led training initiatives for analytical and engineering staff on open source geospatial technology (QGIS, GRASS, OSGeo) for analysis, segmentation, and visualization using Tableau and PowerBI
- Developed five-year strategic plans for data warehouse architecture using Scala, PySpark, and Apache Spark that became foundation of company's distinguishing products
- Led cross-functional teams of seven to eleven engineers, designers, analysts, and external stakeholders using Agile methodologies and modern DevOps practices

## **Mautinoa Technologies, Washington, DC | SOFTWARE ENGINEER August 2016 – February 2018**

### **Financial Technology and Humanitarian Crisis Solutions**

- Developed SimCrisis, a GeoDjango web application using Python, PostgreSQL/PostGIS, and NetLogo for multi-agent modeling and econometric simulations of crisis economies
- Built modular application using Python, Django, and GRASS accepting rules extensions for ethnic strife, different crisis types, supply failures, and disaster scenarios
- Liaised with officers from International Federation of Red Cross, UNICEF, and Chaos Communications Congress to improve platform using Docker and Ubuntu
- Conceived and built application using Python, Pandas, and Jupyter to predict how crisis economies respond to different humanitarian interventions

## **Myers Research, Washington, DC | SENIOR ANALYST August 2012 – February 2014**

### **Quantitative and Qualitative Research for Democratic Campaigns**

- Developed RACSO, a web application for pollsters to fully administer research including questionnaire creation, versioning, and reporting
- Wrote RFP and analyzed bids from 1,200 vendors before selecting implementation partner
- Built prototype in R for comprehensive polling administration and sample file management
- Provided strategic counsel to Democratic campaigns, political actors, and NGOs through quantitative and qualitative research affecting millions of dollars in campaign spending decisions

## **Progressive Change Campaign Committee, Washington, DC | RESEARCH DIRECTOR August 2011 – August 2012**

### **Political Research and Data Analysis**

- Conceived, architected, and engineered FLEEM web application using Twilio API handling tens of thousands of 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 tabular and graphical reporting system with Python, GeoDjango, PostGIS, and Apache webserver
- Designed survey deployment system facilitating thousands of simultaneous phone surveys, saving PAC nearly \$1 million annually in polling costs
- Managed comprehensive research operations for progressive political initiatives and candidates

## **Salsa Labs, Inc., Washington, DC | SOFTWARE ENGINEER January 2011 – August 2011**

### **Political Technology Development**

- Maintained and extended comprehensive geospatial analysis and reporting tools for Java-based CRM system used by tens of thousands of users 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

- Integrated mapping and visualization tools for political campaign data analysis interfacing with Government and Activism APIs
- Collaborated with political strategists to translate geospatial requirements into technical solutions
- Handled billions of records with millions of columns in high-performance CRM system

## **The Praxis Project, Oakland, CA | INTERIM TECHNOLOGY MANAGER April 2009 – October 2009**

### **Nonprofit Technology Integration**

- Led technology operations for multi-million dollar organization while assisting in search for full-time CTO
- Directed all technology decisions and practices for massive multinational non-governmental organization
- Developed comprehensive frameworks for internal and external technology audits
- Led training initiatives for beneficiaries on spatial and Census data analysis for public health research
- Conducted training programs for NGO staff in web development using Drupal, PHP, and MySQL
- Managed technology infrastructure supporting community health initiatives across multiple countries
- Architected and developed 25 Drupal sites to integrate with membership databases, activism CRMs and government agencies, under guidelines from Kellogg Foundation and Robert Wood Johnson Foundation

## **Lake Research Partners, Washington, DC | PROGRAMMER April 2008 – December 2008**

### **Political Polling, Focus Groups and Demographic Analysis for Democratic Campaigns**

- Built the first collaborative and multi-actor contributed poll of polls used by the Democratic Party
- Developed system that later became the Polling Consortium Database at The Analyst Institute
- Worked on all aspects of questionnaire design, sampling, reporting and analysis for Congressional, Senate and Presidential elections affecting millions of dollars in campaign spending decisions
- Conducted statistical modeling and analysis using SPSS, ArcGIS, Quantum GIS, GRASS, Stata, OSCAR, PostgreSQL, PostGIS, and Oracle
- Pioneered integration of advanced mapping techniques into standard reports including choropleths and hexagonal grid maps
- Developed innovative approaches to visualizing demographic and market data for enhanced client understanding
- Trained staff on building Python tooling for report generation and analysis

## **The Feldman Group, Washington, DC | FIELD DIRECTOR August 2007 – April 2008**

### **Political Polling, Focus Groups and Demographic Analysis for Democratic Campaigns**

- Administered all quantitative and qualitative research operations for presidential, gubernatorial, congressional, and senatorial campaigns affecting millions of dollars in spending decisions
- Managed team of 6 research analysts and field staff for comprehensive survey fielding at multi-million dollar research firm
- Developed and implemented data warehousing solutions for efficient storage and retrieval of research findings
- Created custom reports and data visualizations based on specific client requirements
- Introduced mapping and geospatial analysis into standard reporting procedures
- Enhanced value of research deliverables through advanced analytical techniques using SPSS, OSCAR, PHP, and MySQL
- Trained staff on PHP/MySQL for data analysis and reporting systems

## **TECHNICAL SKILLS**

**SURVEY METHODOLOGY & RESEARCH DESIGN** Survey Design and Questionnaire Development for Political and Market Research; Sampling Methodology and Statistical Analysis (R, SPSS, Stata, OSCAR); Random Device Engagement (RDE), Text Message, Web Panel, and Live Telephone Calling; Focus Groups and Qualitative Research Methodologies; Meta-analytical Dataset Development for Longitudinal Analysis; Survey Instrument Standardization and Call Methods Optimization; Expert Testimony and Consultation on Research Methodology

**REDISTRICTING & GEOSPATIAL ANALYSIS** Redistricting Software Development and Boundary Estimation Systems; *Geospatial Analysis* (ArcGIS, Quantum GIS, GRASS, OSGeo, PostGIS); Choropleths and Hexagonal Grid Maps for Demographic Visualization; Spatial Clustering and Boundary Estimation without ML Requirements; Census Data Integration and Demographic Mapping; Court Case Analysis and Expert Testimony for Redistricting; Multi-tenant Data Warehouse Design for Electoral Analytics

**DATA ANALYSIS & VISUALIZATION** Advanced Statistical Modeling and Analysis (Regression, Clustering, Segmentation); *Data Visualization* (Tableau, PowerBI, Seaborn, Matplotlib, d3.js); Consumer Behavior Analysis and Market Segmentation; Machine Learning and Predictive Modeling for Targeting; *Big Data Analytics* (Spark/PySpark, Hadoop, Snowflake, dbt); Fraud Detection and Entity Resolution Systems; Multi-million Dollar Research Project Management