**Dheeraj Chand**

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## PROFESSIONAL SUMMARY

Research & Data Professional with 15+ years of experience in applied research, data engineering, and software development. Expert in translating complex analytical requirements into scalable technical solutions with proven track record leading cross-functional teams.

## CORE COMPETENCIES

Research and Analytics • Programming and Development • Data Infrastructure

## PROFESSIONAL EXPERIENCE

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

Data, Technology and Strategy Consulting

• Lead comprehensive research initiatives for presidential, gubernatorial, congressional, and senatorial campaigns affecting millions of dollars in strategic spending decisions

• 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

• Architect enterprise-scale cloud data warehouse solutions on AWS (EC2, RDS, S3) processing billions of records 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

### DATA PRODUCTS MANAGER - Helm/Murmuration, Washington, DC | 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

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

Financial Technology and Humanitarian Crisis Solutions

• Architected and 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

• Collaborated with senior officers from International Federation of Red Cross, UNICEF, and Chaos Communications Congress to enhance platform using Docker and Ubuntu

• Conceived and developed predictive application using Python, Pandas, and Jupyter to forecast how crisis economies respond to different humanitarian interventions

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

Quantitative and Qualitative Research for Democratic Campaigns

• Architected and developed RACSO, a comprehensive web application for pollsters to fully administer research including questionnaire creation, versioning, and reporting

• Led RFP process and analyzed bids from 1,200 vendors before selecting optimal 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

### RESEARCH DIRECTOR - PCCC, Washington, DC | August 2011 – August 2012

Political Research and Data Analysis (FLEEM System)

• 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

• Significantly increased data collection efficiency through automated calling infrastructure

• Managed comprehensive research operations for progressive political initiatives and candidates

### SOFTWARE ENGINEER - Salsa Labs, Inc., Washington, DC | 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

### INTERIM TECHNOLOGY MANAGER - The Praxis Project, Oakland, CA | 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

### PROGRAMMER - Lake Research Partners, Washington, DC | 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

### FIELD DIRECTOR - The Feldman Group, Washington, DC | 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

## KEY ACHIEVEMENTS AND IMPACT

### Technical Innovation & Platform Development

• Conceived, architected, engineered and deployed cloud-based redistricting software used by thousands of analysts nationwide

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

• Developed RACSO platform for pollsters to fully administer research, analyzing bids from 1,200 vendors

• Engineered FLEEM system using Twilio API for thousands of simultaneous phone calls for IVR polls

• Created SimCrisis platform for humanitarian intervention modeling used by International Red Cross and UNICEF

• Developed boundary estimation system using incomplete data without ML requirements

### Data Engineering & Analytics

• Designed, architected and created multi-tenant data warehouse tracking decades of political, geographical, econometric change

• Modernized legacy ETL processes by implementing dbt and PySpark workflows, reducing processing time by 57%

• Developed advanced data pipelines for machine learning applications enhancing consumer segmentation and predictive modeling

• Built fraud detection systems for campaign finance data analysis across multi-terabyte datasets

• Transformed small data team into big data engineering team using Hadoop Clusters and Hive on AWS

• Introduced version control and Agile methodologies, improving project delivery timelines by 40%

### Research Leadership & Client Success

• Led multi-million dollar research projects involving sensitive consumer data with privacy compliance

• Managed teams of seven to eleven engineers, designers, analysts, and external stakeholders

• Delivered actionable consumer insights and market intelligence for political candidates and major organizations

• Built comprehensive survey operations platform from RFP through deployment

• Regular expert testimony and source on public opinion for journalists, elected officials, and NGO leadership

• Redistricting analysis used in court cases with rigorous methodology and expert testimony

## TECHNICAL SKILLS

RESEARCH AND ANALYTICS Survey Methodology; Statistical Analysis; Geospatial Analysis; Data Visualization; Research Management

PROGRAMMING AND DEVELOPMENT Python; JVM Languages; Web Technologies; Database Languages; Statistical Computing

DATA INFRASTRUCTURE Cloud Platforms; Big Data; Databases; Geospatial; DevOps