**Dheeraj Chand**

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## PROFESSIONAL SUMMARY

Senior Data Engineering & Infrastructure Professional with 15+ years of expertise in building scalable data platforms, ETL/ELT pipelines, and enterprise data warehouses. Expert in cloud architecture, big data processing, and data infrastructure with proven track record designing and implementing comprehensive data solutions, managing cross-functional teams, and optimizing data processing workflows. Deep specialization in Apache Spark, Snowflake, AWS, and data pipeline optimization with experience serving major brands, organizations, and political candidates.

## CORE COMPETENCIES

Data Engineering & Infrastructure • Programming & Development • Data Architecture & Systems

## PROFESSIONAL EXPERIENCE

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

Data Engineering and Infrastructure Architecture

• Architected data infrastructure processing 15+ billion voter records to support meta-analytical voter file corrections

• Built scalable ETL pipelines enabling analysis of 50,000+ electoral boundaries across all levels of government

• Developed Python boundary estimation algorithm that reduced mapping costs by 75% for 200+ organizations

• 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 with integrated data infrastructure

• Drive technical architecture decisions for data-intensive applications using Docker, Git, and modern DevOps practices

• Built multi-tenant data infrastructure supporting concurrent access from diverse client organizations

### 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

• 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 capabilities

• 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

### ANALYTICS SUPERVISOR - GSD&M, Austin, TX | November 2019 – June 2020

Data Engineering and Big Data Infrastructure

• Transformed the small data team into a big data engineering team, going from working on small datasets on laptops to using Hadoop Clusters and Hive on AWS

• Implemented spatial analysis and consumer segmentation methodologies that revealed new insights about existing customers

• Introduced version control and Agile methodologies to the data team, improving project delivery timelines by 40%

• Managed three analysts, mentoring them in advanced market research techniques and data analysis

• Rewrote the mission and offerings of the department and drafted a plan for how it would integrate with the rest of the strategy team

• Managed accounts for United States Air Force, Southwest Airlines/Chase and Indeed with focus on data-driven insights and infrastructure

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

Data Engineering 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

• Applied agent-based modeling, statistical analysis and machine learning systems for humanitarian impact assessment

• Developed data models and processing pipelines for sensitive humanitarian data

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

Data Engineering and Research Infrastructure

• 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

• Developed data infrastructure to support comprehensive research operations and client reporting

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

Political Technology Development and Data Infrastructure

• 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

• Developed data infrastructure to support large-scale political research and analysis

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

Political Technology Development with Data Infrastructure

• 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 with geospatial processing

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

Nonprofit Technology Integration and Data Infrastructure

• 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

## TECHNICAL SKILLS

DATA ENGINEERING & INFRASTRUCTURE Big Data Processing; Data Warehousing; Cloud Platforms; Streaming Data; Data Pipeline Optimization; Data Governance

PROGRAMMING & DEVELOPMENT Python; Scala; SQL; Database Design; Version Control; DevOps

DATA ARCHITECTURE & SYSTEMS Distributed Systems; Data Modeling; API Development; Monitoring; Security; Performance

15+ years of experience in data engineering, infrastructure architecture, and big data processingExpert in building scalable data platforms, ETL/ELT pipelines, and enterprise data warehousesProficient in cloud architecture, Apache Spark, Snowflake, and data pipeline optimizationStrong background in data governance, quality control, and compliance across multi-terabyte datasetsExtensive experience with microservices, event-driven architectures, and modern DevOps practices