**DHEERAJ CHAND**

**Research, Data Analytics & Engineering Professional**

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## PROFESSIONAL SUMMARY

Research & Data Professional with 20+ years of comprehensive experience spanning applied research, data engineering, and software development. Expert in translating complex analytical requirements into scalable technical solutions. Proven track record leading cross-functional teams, architecting data platforms, and delivering insights that drive strategic decision-making across political, nonprofit, and technology sectors. Deep expertise in survey methodology, geospatial analysis, and building production systems for sensitive data applications.

## CORE COMPETENCIES

**Research and Analytics**

Survey Methodology: Design, sampling, weighting, longitudinal analysis • Statistical Analysis: Regression modeling, clustering, segmentation, machine learning • Geospatial Analysis: Spatial clustering, boundary estimation, demographic mapping • Data Visualization: Tableau, PowerBI, d3.js, Matplotlib, Seaborn, choropleth mapping • Research Management: Team leadership, methodology design, stakeholder communication

**Programming and Development**

Python: Django/GeoDjango, Flask, Pandas, PySpark, SciKit-Learn, TensorFlow • JVM Languages: Scala (Spark), Java, Groovy • Web Technologies: JavaScript, React, d3.js, PHP, HTML/CSS • Database Languages: SQL, T-SQL, PostgreSQL/PostGIS • Statistical Computing: R, SPSS, SAS, Stata

**Data Infrastructure**

Cloud Platforms: AWS (EC2, RDS, S3), Google Cloud Platform, Microsoft Azure • Big Data: Apache Spark, PySpark, Hadoop, Snowflake, dbt • Databases: PostgreSQL/PostGIS, MySQL, Oracle, MongoDB, Neo4j • Geospatial: ESRI ArcGIS, Quantum GIS, GeoServer, OSGeo, GRASS • DevOps: Docker, Git, CI/CD pipelines, automated testing, version control

## PROFESSIONAL EXPERIENCE

**PARTNER**

Siege Analytics, Austin, TX | 2005 – Present

*Data, Technology and Strategy Consulting*

* ▸ Conduct comprehensive quantitative and qualitative research studies for political candidates and organizations
* ▸ Architect cloud-based data warehouse solutions processing billions of records for electoral analytics
* ▸ Design scalable ETL pipelines using PySpark and dbt for large-scale geospatial and demographic datasets
* ▸ Develop custom analytical tools and algorithms for fraud detection and spatial clustering
* ▸ Manage complex client relationships across political, nonprofit, and technology sectors
* ▸ Lead technical architecture decisions for data-intensive applications and platforms

**DATA PRODUCTS MANAGER**

Helm/Murmuration, Austin, TX | 2021 – 2023

*Enterprise Data Platform Development*

* ▸ Led design and implementation of enterprise-scale multi-tenant data warehouse
* ▸ Managed engineering team of 11 professionals setting technical direction
* ▸ Modernized legacy ETL processes implementing dbt and PySpark workflows
* ▸ Overhauled survey methodology using Random Device Engagement and text messaging
* ▸ Developed data governance framework and quality control measures
* ▸ Built meta-analytical dataset for longitudinal analysis standardizing survey instruments

**ANALYTICS SUPERVISOR**

GSD&M, Austin, TX | 2018 – 2019

*Big Data Transformation and Advanced Analytics*

* ▸ Transformed small data team into big data engineering operation scaling to Hadoop clusters
* ▸ Managed accounts including US Air Force, Southwest Airlines/Chase, and Indeed
* ▸ Implemented spatial analysis and consumer segmentation methodologies
* ▸ Applied advanced statistical and ML techniques for behavioral clustering
* ▸ Introduced version control and Agile methodologies improving delivery by 40%

**SOFTWARE ENGINEER**

Mautinoa Technologies, Austin, TX | 2016 – 2018

*Financial Technology and Humanitarian Crisis Modeling*

* ▸ Conceived and engineered SimCrisis: GeoDjango application for econometric crisis simulations
* ▸ Collaborated with International Federation of Red Cross, UNICEF, and humanitarian organizations
* ▸ Implemented geospatial analysis for population impact assessment and resource optimization
* ▸ Developed agent-based modeling and statistical analysis systems for crisis prediction

**SENIOR ANALYST**

Myers Research, Austin, TX | 2012 – 2014

*Strategic Research and Survey Operations*

* ▸ Co-developed RACSO web application for comprehensive survey operations management
* ▸ Designed survey instruments for specialized voting segments and niche markets
* ▸ Introduced geospatial techniques enhancing market segmentation capabilities
* ▸ Managed RFP process analyzing bids from 1,200+ vendors for platform development

**RESEARCH DIRECTOR**

Progressive Change Campaign Committee, Austin, TX | 2011 – 2012

*Large-Scale Survey Systems and Method Development*

* ▸ Engineered FLEEM web application using Twilio API for thousands of simultaneous IVR surveys
* ▸ Led all aspects of survey design, implementation, data analysis, and reporting
* ▸ Developed new statistical methods for boundary estimation and geographic segmentation
* ▸ Created comprehensive data visualization solutions for complex research findings

## KEY ACHIEVEMENTS AND IMPACT

**Software Development and Innovation**

* ✓ Conceived and deployed BALLISTA redistricting software used by thousands of analysts nationwide
* ✓ Developed DAMON boundary estimation system using incomplete data without ML requirements
* ✓ Created SimCrisis econometric simulation platform for humanitarian intervention modeling
* ✓ Built RACSO comprehensive survey operations platform from RFP through deployment

**Data Architecture and Engineering**

* ✓ Designed multi-dimensional data warehouse tracking decades of political and economic change
* ✓ Implemented scalable ETL pipelines achieving 57% performance improvement
* ✓ Developed fraud detection systems across multi-terabyte campaign finance datasets
* ✓ Created spatial clustering algorithms achieving 88% improved targeting efficacy

**Research Impact and Recognition**

* ✓ Research analysis used in court cases for redistricting, housing, and community development
* ✓ Regular expert testimony on methodology for journalists and elected officials
* ✓ Built foundational polling consortium infrastructure adopted by major research organizations
* ✓ Pioneered integration of geospatial techniques into political and market research