Dheeraj Chand

[RESEARCH, ANALYSIS, ENGINEERING] → UNDERSTANDING

Austin, TX (30.2672°N, 97.7431°W)

PROFESSIONAL SUMMARY

Senior data scientist and software engineer specializing in geospatial machine learning and large-scale demographic analysis. Developed algorithms that improved demographic classification accuracy from 23% to 64%, processed data across 178,000+ precincts, and built platforms serving thousands of analysts nationwide.

KEY ACHIEVEMENTS AND IMPACT

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

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