dheeraj.chand@gmail.com
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GitHub: github.com/dheerajchand

Dheeraj Chand

[RESEARCH, ANALYSIS, ENGINEERING] → UNDERSTANDING

Austin, TX (30.2672°N, 97.7431°W)

PROFESSIONAL SUMMARY

Senior GIS & Geospatial Analysis Professional with 15+ years of experience in ESRI Arc Suite, SAFE Systems, and OSGeo technology stack. Expert in spatial analysis, demographic mapping, and geospatial data processing with proven track record building enterprise-scale GIS solutions using both proprietary and open source technologies, leading cross-functional teams.

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

GIS & Geospatial Analysis Consulting

- Utilized ESRI Arc Suite and OSGeo technology to map and analyze 50,000+ electoral boundaries across federal, state, and local levels
- Applied geospatial analysis to uncover demographic miscoding affecting 2,000+ precincts nationwide
- Developed boundary estimation tools enabling smaller organizations to conduct sophisticated redistricting analysis
- Lead comprehensive research initiatives for presidential, gubernatorial, congressional, and senatorial campaigns affecting millions of dollars in strategic spending decisions using ESRI Arc Suite and SAFE Systems
- Architect enterprise-scale cloud data warehouse solutions on AWS (EC2, RDS, S3) processing billions of records for electoral analytics and demographic analysis with advanced geospatial processing
- 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 GIS capabilities
- Drive technical architecture decisions for data-intensive applications using Docker, Git, and modern DevOps practices with geospatial components

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

Geospatial 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 with advanced geospatial processing
- 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

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

Geospatial 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

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

Geospatial Research and Analysis for Democratic Campaigns

- Architected and developed RACSO, a comprehensive web application for pollsters to fully administer research including questionnaire creation, versioning, and reporting with integrated geospatial analysis
- 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 with spatial analysis capabilities
- Provided strategic counsel to Democratic campaigns, political actors, and NGOs through quantitative and qualitative research affecting millions of dollars in campaign spending decisions using ESRI Arc Suite and SAFE Systems

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

Political Technology Development and Geospatial Research Operations

- 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

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

Nonprofit Technology Integration with GIS Focus

- 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 using ESRI Arc Suite and SAFE Systems
- Conducted training programs for NGO staff in web development using Drupal, PHP, and MySQL with geospatial components
- Managed technology infrastructure supporting community health initiatives across multiple countries

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- 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

For a more detailed, full description of my experience, please visit my LinkedIn (https://www.linkedin.com/in/dheerajchand/) and Personal Site (https://www.dheerajchand.com).

TECHNICAL SKILLS

GIS SOFTWARE & PLATFORMS *ESRI Arc Suite* (ArcGIS Desktop, ArcGIS Pro, ArcGIS Online, ArcGIS Server, ArcGIS Enterprise); *SAFE Systems* (Secure geospatial data processing and analysis workflows); *Open Source GIS* (QGIS, GRASS, PostGIS, GeoServer, OSGeo technologies); *Cloud GIS* (ArcGIS Online, AWS geospatial services, Google Earth Engine); *Spatial Databases* (PostgreSQL/PostGIS, Oracle Spatial, SQL Server Spatial)

GEOSPATIAL ANALYSIS *Spatial Analysis* (Buffer analysis, overlay operations, spatial statistics, network analysis); *Demographic Mapping* (Census data integration, choropleth mapping, demographic segmentation); *Redistricting* (Boundary analysis, population balancing, compactness measures); *Data Visualization* (Cartographic design, interactive mapping, 3D visualization); *Remote Sensing* (Satellite imagery analysis, land use classification, change detection)

PROGRAMMING & DEVELOPMENT *Python* (ArcPy, GeoPandas, Shapely, Fiona, Rasterio, GeoDjango); *JavaScript* (ArcGIS API for JavaScript, Leaflet, OpenLayers, D3.js); *Web Technologies* (ArcGIS Web AppBuilder, custom web mapping applications); *Database Languages* (SQL, PostGIS spatial functions, Oracle Spatial); *Statistical Computing* (R, SPSS, SAS, Stata with spatial analysis extensions)