Jason Matney, Ph.D.

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RECENT EMPLOYMENT

ICF October 2021 - Present
Senior Manager, Data Viusalization

Jason leads a team of GIS and data visualization experts in ICF's Engineering and Emerging Technologies group, regularly leveraging tools like Tableau, Power BI, and Qlik to deliver actionable, data-driven insights to clients via interactive business intelligence dashboards and web mapping applications. He brings more than 10 years of experience managing spatial data workflows and highlighting KPIs from data holdings using geospatial analytics and data visualization.

Jason's work drives decision-making for federal, state, and local clients around challenges involving risk, resilience, and environmental management. Clients include the U.S. Department of Labor (DOL), U.S. Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), National Park Service, General Services Administration, and U.S. Postal Service. Fundamentally, Jason unearths added value within organizations through persistence, curiosity, and collaboration across siloed groups. Through dedication to client satisfaction, he delivers solutions that allow decision-makers to confidently navigate option sets, expedite insight generation, and resolve longstanding inefficiencies through digital modernization.

Dewberry July 2019 - October 2021
GIS Resource Team Lead

- Served as Resource Team Lead for the GIS Team within the Resilience Solutions Business Unit. He managed all workload elements for a team of GIS Professionals, while being tasked with ensuring high utilization rates, coordinating human capital deployment, and acting as a lead point of contact for all deliverables produced by the GIS Team. Jason was responsible for shaping the future of the GIS Team through employee retention, termination, and recruitment.
- Collaborated on the development of national scale machine learning modeling efforts, as well as performed geospatial data collection, development, processing, cleaning, and validation.
- Directly supported Dewberry's Probabilistic Flood Risk Assessment (PFRA) contract. His role with PFRA involved pioneering innovative ways to assess risk, incorporating techniques from the field of geospatial statistics.

SECURITY CLEARANCE

HHS Security Clearance July 2022 - Present
Public Trust, Moderate Risk

FEMA Security Clearance August 2019 - October 2021
Public Trust, Moderate Risk

EDUCATION

Doctor of Philosophy 2015 - 2019
Geospatial Analytics | North Carolina State University

Master of Science 2012 - 2014
Geography | Michigan State University

Bachelor of Arts 2004 - 2009
Program in the Environment | University of Michigan

PROJECTS

Puerto Rico Department of Housing (PRDOH) Spring 2024 - Present
Geospatial Risk and Asset Data (GEO/RAD) Framework

· ICF is assisting PRDOH in enhancing disaster resilience through the GEO/RAD framework, which integrates advanced geospatial data collection and analysis. Jason serves as the AI/ML Lead, focusing on leveraging machine learning models to automate the identification and analysis of disaster-prone infrastructure. Jason is developing a centralized data management system using PostgreSQL to ensure efficient handling of extensive geospatial datasets. Advanced ETL processes are executed using Python and R, enabling streamlined data ingestion and transformation. By integrating Tableau and ArcGIS, Jason delivers interactive visualizations and geospatial insights, facilitating strategic decision-making and planning for disaster mitigation. This innovative approach improves data accuracy, accessibility, and the overall effectiveness of PRDOH's disaster resilience efforts.

Substance Abuse and Mental Health Services Administration (SAMHSA) Fall 2022 - Present
988 Lifeline Performance Metrics Dashboard

· ICF is supporting SAMHSA in undergoing a digital modernization of the 988 Lifeline program. Jason is focused on modernizing the display of tabular performance metrics data by developing and delivering a public facing web-based dashboard. Jason is tasked with establishing a robust data management system utilizing PostgreSQL, ensuring reliable and efficient handling of large datasets. Key to this process is the use of R Tidyverse for ETL (Extract, Transform, Load) operations, streamlining the data preparation phase. Jason manages the dashboard development which is executed with Tableau, offering an interactive and insightful visualization of the 988 Lifeline's performance metrics. This comprehensive approach not only enhances data accuracy and accessibility but also aids in strategic decision-making and media communication regarding SAMHSA's services.

U.S. International Development Finance Corporation (DFC) Fall 2022 - Present
Insights Monitoring Module Architect

· As a contractor with public trust clearance with the prime U.S. federal development finance institution, Jason plays a key role in development and delivery of a monitoring module dashboard for use by DFC deal officers. Jason is responsible for requirements gathering, dashboard design, resource management, client interfacing, and deliverable presentation on the project. In this role, Jason works with Salesforce developers to query complex data objects and pull them into customer relationship management analytics for dynamic display and user interactivity.

U.S. Department of Defense (DoD) Fall 2022 - Present
Military OneSource Demographics Dashboard Lead

· Jason leads a team of developers working to support DoD in creating data-rich dashboard visualizations that summarize annual demographic statistics within the Armed Forces. These visualizations are developed in Tableau and then embedded within a public-facing WordPress website for the Military OneSource program. Jason partners with his team, partner contractors, DoD staff, and other stakeholders to shepherd these visualizations to completion, while developing efficiency recommendations for future annual implementation. Jason drove implelemtation of several efficiencies within this multi-year contract, including the utilization of Alteryx for data ETL, AWS RDS PostgreSQL instance for data storage, management of AWS S3 Tableau Server navigating the revival of a languishing instance, and Trello for project management. See the previous years' presentation of DOD Military OneSource demographic data at: https://demographics.pre.militaryonesource.mil/

Department of Labor (DOL) Summer 2022 - Present
Senior Tableau Developer

· Jason serves a key role in a substantial DOL contract focused on delivering a comprehensive data warehouse and business intelligence platform to the organization. Jason is tasked with developing complex calculated fields for business logic, field actions, sets and parameters to include various filtering capabilities for high-visibility dashboards, while also providing drill-down features for the detailed reports in Tableau. In addition, Jason creates storytelling dashboards in Tableau Desktop and publishes them on to Tableau Server, allowing end users to understand the data on the fly with the usage of quick filters for on demand needed information.

Texas General Land Office (TXGLO) Fall 2021 - Present
Lead Application Developer

· ICF is providing design, analytics, web application development and maintenance of several mapcentric, GIS-enabled dashboards that provide TXGLO staff with mission-critical spatial analysis of complex data such as funding streams, grant applicants, resource/utility location, and disaster response. Jason contributes to design, development, and testing of GIS dashboard applications in addition to interfacing with TXGLO leadership in order to tailor business solutions to the stated needs of the GIS team, including custom mapping solutions facilitating the identification of vulnerable populations to enhance service to those communities.

View TX GLO GIS projects Jason has supported here: https://gis-glo-cdr.hub.arcgis.com/

Hawaii State Energy Office (HESO) Fall 2022 - Present
Lead Geospatial Decision Support System Developer

· ICF is supporting HESO in assembling technologies, policies, standards, and data resources to develop a Geospatial Decision Support System (GDSS). The core deliverable is an authoritative, GIS dashboard and decision support system that provides end users the ability to explore, query, and understand complex geospatial data such as energy infrastructure networks. Jason is working to compile HESO energy and logistic geospatial layers while highlighting key dependencies and network effects that connect disparate infrastructure resources within a web-based deliverable. The final GDSS will provide HSEO decision makers with a baseline method for accessing and reviewing critical energy infrastructure resources while serving as a dynamic tool that includes resources, prioritizations, dependencies, threats, hazards, and vulnerabilities.

FEMA Radiological Emergency Preparedness Program (REP) Winter 2022 - Summer 2023
Analytics Team Member

· ICF supports FEMA REP in a long-term effort to rationalize reporting workflows and unlock novel insights across disparate data sources. A key component of the work is development and maintenance of Tableau dashboards which provide operational insights into nationwide nuclear power resources. Jason's responsibilities include Tableau dashboard development, performing Optical Character Recognition for text extraction, text classification using Deep Learning models, and supporting application development using Microsoft Power Apps.

Office of the Director of National Intelligence (ODNI) Spring 2022 - Summer 2023
Lead BI Application Developer

· ICF is providing analytics support services to ODNI with the goal of summarizing the landscape of needs and capabilities regularly leveraged by the organization in order to highlight competitive advantages and support acquisition and quantifying of future opportunities. Jason met with ODNI leaders and based on several rounds of negotiations scoped and developed an advanced Tableau Server dashboard that includes quick context and global filters, calculated fields, and geographic components to serve as a proof-of-concept model for ODNI to consider for integration. Jason presented results to ODNI leadership, providing actionable user stories, top-level KPIs, and potential functionality iteration.

Oregon Community Development Block Grant Disaster Recovery (CDBG-DR) Spring 2022
Lead GIS Analyst

· Jason provided essential, on-demand web mapping and analytic support to an ICF research team assessing the risk of wildfire hazards, including demographic profiles of potentially affected populations throughout the state of Oregon in support of CDBG-DR development. In this effort, Jason collected and aggregated wildfire and population data, mapped the resulting data products tailored to specific needs within the Action Plan, mentored and managed junior colleagues, and ensured specific, actionable insights surrounding the risk wildfire poses to vulnerable populations within the state of Oregon.

U.S Environmental Protection Agency (EPA), San Fernando Valley Fall 2021 - Present
GIS Application Developer

· Jason served as an application developer in support of the U.S. EPA San Fernando Valley Outreach CSM (Conceptual Site Model) in implementing an interactive ArcGIS Story Map to serve as a repository for key historical

information and citizen engagement relevant for understanding EPA-designated Superfund sites located within the San Fernando Valley, CA. His specific responsibilities included resource management, design, geospatial analysis, and user experience optimization. Jason consulted on optimal user interface strategies, performed client management duties, as well as managed resource allocation throughout development of the final Story Map deliverable.

EPA Clean Air Markets Division (CAMD) Fall 2021 - Winter 2022
Lead GIS Analyst

· Jason performed a multilayered spatial analysis in support of EPA's Clean Air Markets Division assessment of the proximity of all continental US power plants relative to boundaries of Regional Carbon Sequestration Partnership (RCSP) Saline Basin grid cells, as well as proximity of Enhanced Oil Recovery (EOR) Oil and Gas Wells to Saline Basin grid cells. The results of this analysis were folded into a broader analysis of climate impacts and vulnerability mitigation considerations related to the nation's energy supply and pipeline infrastructure (length of pipelines, resources needed to move energy, etc.). Deliverables for this project included recommendations on the shortest distance to the boundary of a deep saline formation for power plants and oil/gas wells throughout the continental US, as well as a decision-support mapping product which highlighted all regions of the US which met select criteria related to density of oil/gas wells, depth of these wells, and proximity to saline basins and power plants.

Dewberry - California Department of Social Services Fall 2021
Senior Data Manager - COVID-19 Humanitarian Response for Border Mission

· Lead overhaul of data collection, Power BI dashboard deployment, and data reporting for a extremely dynamic, mission-driven project in support of migrant asylum seekers. Totally revamped an Excel-based workflow through institution of firm data standards, cleansing of data protocols, and implementation of mobile forms for data collection.

· Responded to complex directives in an environment where known quantities can change in a matter of hours. Weighed implications of national legislative action on the shifting state of the data collection environment along with collector needs. Navigated constant ambiguity through independent motivation, determination to deliver for the client, and communicating across silos.

PEER-REVIEWED ARTICLES

Published in Accredited Journals 2013 - 2020

· **Matney, J.**, Slocumb, W. S., Smith, J. W., Bonsall, P., & Supak, S. K. (2019). Implementation and evaluation of a geospatial management solution for the U.S. National Park Service's Rivers, Trails, and Conservation Assistance Program. Journal of Park and Recreation Administration. doi: 10.18666/JPRA-2019-9250

· Smith, J. W., Slocumb, W. S., Smith, C., & **Matney, J.A.** (2015). A Needs-Assessment Process for Designing Geospatial Data Management Systems within Federal Agencies. Journal of Map & Geography Libraries, 11(2), 226-244.

· Babcock, C., **Matney, J.**., Finley, A., Weiskittel, A., & Cook, B. (2013). Multivariate spatial regression models for predicting individual tree structure variables using LiDAR data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 6(1), 6-14.

TECHNICAL REPORTS

Professional reports completed in support of client-funded projects 2017 - 2019

· **Dewberry**, (2019). Longitudinal dataset README and Methodology note. Technical description of methods and scope of effort related to the compilation of longitudinal National Flood Insurance Program polices and claims data. Prepared for interested stakeholders in support of FEMA/FIMA's goals related to customer lifetime information, assessing policy tenure, and acquiring policy summaries at various geographic levels.

· **Matney, J.**, Slocumb, W. S., Hipp, A. J. (2018). Feasibility study and report to assess migration of a web GIS portal for geospatial data management to service the National Park Service Conservation and Outdoor Recreation Branch and Related Programs. Raleigh, NC: Center for Geospatial Analytics, NC State University.

GRADUATE STUDENT EMPLOYMENT

PhD Student January 2015 - June 2019
NC State University, Raleigh

- Designed and deployed a comprehensive suite of Web-enabled GIS applications for the US National Park Service.
- Worked closely with federal agency staff while customizing software in the ESRI suite using the JavaScript for ArcGIS 4.X API.
- Identified on-demand solutions for clients using advanced tools to visualize and track over 2000 funding streams valued at millions of dollars throughout the nationwide NPS system.
- Excelled in technical courses like Spatial Data Mining in R, Geoprocessing in Python, GRASS GIS, & Enterprise Server management in ArcGIS 10.5.

Graduate Student October 2011 - April 2014
Michigan State University, East Lansing

- Front-end scripting in R - implementing the spBayes package alongside MySQL database management.
- Improved prediction of environmental covariates extracted from LiDAR datasets using spatial Bayesian models.
- Developed charts using ggplot2 and reprojected remote sensing data via R's Raster package on GNU/Linux systems.
- Excelled in technical courses like Spatial data analysis, probability theory, Linear algebra, & Landscape Use and Land Cover simulation.

COURSES TAUGHT

Instructor – Environmental Science Capstone Jan. 2019 - June 2019
NC State University, Raleigh

- Lead an in-person capstone course for NC State undergraduate seniors in environmental sciences or related majors, emphasizing the use of analytical approaches for solving environmental problems and for communicating results.
- The primary goal was shepherding the development of student projects that highlighted sophisticated environmental decision-making, such as devising a resource management plan, or developing a predictive model.

Co-Instructor – Introduction to Geographic Information Systems Sept. 2015 - Dec. 2018
NC State University, Raleigh

- Managed new content production for a 200-person online course required for all students matriculated within the Master of Geospatial Science and Technology program.
- Modernized the curriculum by integrating ArcGIS web-mapping applications, Spatial Data Analysis in R, and video tutorials throughout the curriculum.

Co-Instructor – WebGIS Frontiers: Protocols, Services, and Applications Sept. 2017 - Dec. 2018
NC State University, Raleigh

- Delivered insight into real-time GIS using GeoEvent Server to advanced graduate students.
- Improved breadth of the course by developing instructional material for custom hosted web apps using ArcGIS API 4.X for JavaScript.
- Supported distance education students through standardized feedback and assistance, including one-on-one google hangout consultation sessions.

Course Developer – Introduction to Geoprocessing with ArcPy January 2016 - January 2017
Michigan State University, East Lansing

- Managed the creation of a new Introduction to Geoprocessing course for MSU's onGEO Online initiative.
- Developed a curriculum focused on automating tasks with Python for ArcGIS batch processing.
- Delivered instructional video support, comprehensive lesson plan, and novel assignments to the MSU onGEO team.
- Incorporated advanced python geoprocessing functionality, including hosting tools in ArcGIS Online

CONFERENCE PRESENTATIONS

AGU 2020 – *Stacked ensemble modeling of flood risk wihtin Indiana, USA* 2020

AWRA NCRS – *Serverless web maps for rapid probabilistic flood risk validation* 2020

ISSRM – *Park and Protected Area visitation estimation* 2018

UCGIS – *LiDAR Uncertainty and Classification on ROGER* 2017

NCGIS – *Web GIS For Federal Agencies With The National Park Service RTCA Program* 2017

PSAC-CESU – *A Geospatial Database and Web Mapping Application for the NPS* 2015

ISSRM – *A Needs Assessment for Geospatial Data Management Systems in Federal Agencies* 2015

AWARDS

ICF Silver Award - Excellence in development/delivery of a hazard assessment tool for the Texas GLO 2022

Dewberry at Work Award - Perseverance 2019

NC State's Esri Development Center Student of the Year – Innovative use of Esri technologies in research 2019

Hackathon Developer – Accepted into Geometry of Redistricting workshop at Duke University 2017

UCGIS Summer School – Accepted into inaugural CyberGIS Summer School for GIS graduate students 2017

Columbia University Visiting Researcher – Developed models for biomass prediction using LiDAR data 2013

NASA-MSU Award – Professional Enhancement Award 2013

TECHNICAL STRENGTHS

Skills	Geospatial data analysis, Analytic dashboard development, Web mapping applications
Interests	Applied web mapping, machine learning, big data, and distributed computing
Design Software	Adobe Illustrator
Platforms	ArcGIS, R (Shiny, Leaflet), Python (ArcPy, Numpy, scikit-learn, Pandas), GRASS
Dashboard	Tableau, Power BI, Qlik, CRM Analytics
Data Science	H2O AI, Keras
Databases	PostgreSQL, PostGIS, MSSQL Management Studio

GEOSPATIAL ANALYTICS COURSES

Udemy: Python for Data Science and Machine Learning Bootcamp Spring 2019

ST 590 Applied Bayesian Analysis Spring 2016

ST 590 Statistical Learning and Data Mining Spring 2016

GIS 595 Advanced Environmental Remote Sensing Spring 2016

GIS 550 Geospatial Data Structures and Web Services Fall 2015

MEA 582 Geospatial Modeling Fall 2015

GIS 540 Geospatial Programming Spring 2015

CSC 791 Spatial and Temporal Data Mining Spring 2015