ARTHUR (AJ) LIBERATORE

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SKILLS

Languages: Python, Java, SQL, R, Javascript
Frameworks/Libraries: PyTorch, Django, Vue.js, RShiny
AI/ML: Sentiment Analysis, Generative AI, NLP, Model Deployment (RShiny Apps)
Cloud Platforms: AWS (Lambda, EC2, S3, ECS), Docker
DevOps/Software: Git, Github, Linux, REST APIs, SQL Server Management Studio, PostgreSQL, Adobe Suite, MO365
Data Viz: Power BI, Tableau, Gephi, Power Query, DAX
Techniques: Full-Stack Development, Business Intelligence, Data Warehousing, UX/UI, Data Pipelines, Network Analysis
Clearance: DHS Top Secret, VA

WORK EXPERIENCE

Intermediate Data Scientist at The MITRE Corporation, Bedford, MA   May 2021 - June 2025
- Produced weekly reports analyzing VA medical/surgical inventory and asset management data across U.S. facilities, identifying trends and optimization opportunities vs. industry benchmarks; led to targeted audits and policy updates to improve supply chain efficiency and reduce waste.
- Developed and deployed an RShiny dashboard in AWS to support a defense-focused program, improving delivery of key indicators.
- Led development of 8+ Power BI dashboards to support VA hiring, training, project management, and org transformation; briefed insights to the Under Secretary of Benefits and advised on Power Platform adoption.
- Took ownership of a Django + Vue.js stack supply chain dashboard; mentored an intern and connected ML model outputs to interactive front-end visualizations (charts, histograms, trade maps).
- Conducted organizational network analysis of MITRE using clustering techniques and RShiny to visualize internal collaboration and policy effects.
- Built the Asthma Equity Explorer RShiny dashboard, adopted by the Asthma Equity Network, to visualize environmental and health indicators impacting asthma prevalence.
- Developed the ACAGPM R package (GitHub) to map particulate matter raster data to census tract, place, county, and state shapefiles.
- Built an NLP sentiment analysis pipeline to analyze 100k+ global news articles, generating topic and sentiment insights for strategic decision-making by government-facing teams.

Research Analysis Intern at Process First, Boston, MA   August 2020 – June 2021
- Reduced food insecurity in New England by optimizing food bank infrastructure.
- Researched input-output economic analyses to assess community-level impacts of policy interventions.
- Designed data pipelines and dashboards enabling local farmers to align production with real-time demand, improving access to healthy food in underserved areas.

PUBLICATIONS

- Sanderson, E., Maitra, R. L., & Liberatore, A. J. (2025). Anomalous diffusion and factor ordering in (1+ 1)-dimensional Lorentzian quantum gravity. Nuclear Physics B, 1010, 116779.
- Bland, W., Escobar, L., Hong, A., Kenneally, G., Liberatore, A., & Rosen, S. (2023). A Hybrid System Dynamics/Input-Output Model for Studying the Impact of Transportation Delays on the Resiliency of National Supply Chains. IEEE.

EDUCATION

Wentworth Institute of Technology, Boston, MA   Graduation: August 2021
- Bachelor of Science - Major in Applied Mathematics, Minor in Data Science

CERTIFICATIONS

Generative AI with Large Language Models (2025)
- DeepLearning.AI & Amazon Web Services

INTERESTS

Personal Training and Fitness
- Competitive bodybuilding (5 contests across 2 seasons since 2023), online coaching services in fitness and wellness