Richard M. Flores

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Summary

Data Scientist and M&S Specialist with a foundation in Physics, an MSc in Data Analytics, an MBA, and currently a PhD student in Data Science specializing in Computational Intelligence and Decision Science. After driving rapid-response data modeling within the startup culture of ANVL, I rose through NASA from Analyst to Data Scientist, pioneering GPU-accelerated Deep Learning and NLP architectures for multi-billion-dollar aerospace missions. I served as NASA's AI Advisor to the NSF where I shaped federal policy in collaboration with NIST and the NSA. I now leverage high-performance computing and predictive modeling at Janus Research to architect distributed simulations for the Army Wargaming Branch.

Experience

Janus Research Group, Future Warfare M&S Specialist, Full-time 40 hours/week, January 2026 – Present

As a Future Warfare Modeling & Simulation (M&S) Specialist, I leverage advanced computational modeling, SQL-driven data engineering, and operational analytics to support the Army Wargaming Branch in evaluating future force structures and capabilities. I oversee the full lifecycle of distributed simulation events from the mathematical validation of unit entity properties to the engineering of automated data capture systems ensuring that complex wargame outputs are converted into high-fidelity, actionable insights for senior Joint and Army Command leadership.

- Architected complex scenario data and multi-layered unit/entity relationships using Neo4j graph databases alongside advanced SQL structures, ensuring data integrity and rapid traversal of performance characteristics during large-scale distributed simulation events.
- Engineered and deployed a full-stack simulation environment integrating a Python/Flask backend and NetworkX graph structures with a Unity (C#) frontend to dynamically model kinetic warfare and logistics disruption networks.
- Designed relational structures utilizing Neo4j graph databases to map complex scenario data enabling rapid querying and traversal of unit and entity compositions for simulation environments.
- Utilized foundational game theory matrices (incorporating discrete mathematics) to optimize decision-science models and evaluate strategic trade-offs for future warfare simulations.
- Structured complex simulation logic into comprehensive whiteboard presentations, generating specialized wargaming diagrams to clearly illustrate strategic concepts and AI decision logic to stakeholders.

NASA – Langley Research Center, Data Scientist, (GS-9)**,** Full-time 40 hours/week, *Aug 2024 – Dec 2025*

Directed cutting-edge analytics and artificial intelligence projects, incorporating predictive modeling, natural language processing, and GPU-accelerated computation to improve financial strategy, risk management, and operational effectiveness. Provided cohesive, high-quality insights from intricate, multi-sourced datasets to guide decision-making.

- Designed and implemented a GPU-enhanced deep learning infrastructure and tailored NLP framework to combine diverse financial, operational, and mission datasets into a cohesive analytical model. This functionality shortened essential monthly reporting periods from days to hours, allowing leadership to make urgent, data-informed decisions with exceptional clarity.
- Oversaw the upgrade of NASA's analytical framework by combining sophisticated ML architectures (TensorFlow) with high-performance GPU processing (NVIDIA CUDA, cuDNN). Achieved a tenfold boost in computational efficiency, enabling intricate, high-dimensional analyses that directly guided strategic planning and mission viability evaluations.
- Developed an OCR-based data ingestion and transformation pipeline that automated the extraction of information from unstructured archival documents, decreasing manual processing time by hours for each report. This project not only maintained the integrity of historical data but also transitioned legacy datasets into relational structures, improving accessibility for longitudinal studies and compliance evaluations.
- Certified Mishap Investigation Board Member, NASA Human Factors Analysis and Classifications System practitioner, and NASA Lean Six Sigma Green Belt, leveraging structured safety analysis, human-factors assessment, and continuous-improvement frameworks to elevate organizational reliability and strengthen enterprise-level risk governance.

NASA – Glenn Research Center, Lead Data Analyst, Full-time 40 hours/week, *Jan 2024 – May 2024*

Oversaw the development and implementation of cohesive data frameworks and high-capacity visualization systems, facilitating real-time mission analysis and data-driven decision making.

- Created efficient ETL pipelines and sophisticated visualization systems to handle and examine extensive, multi-modal data sets, providing essential analytical insights.
- Created an interactive Flask/Plotly analytics platform that allows for dynamic, parameter-driven visualization of wind-tunnel related data for operational studies and strategic planning.
- Developed a standardized SQL Server backend with enhanced indexing and query execution strategies, guaranteeing data accuracy and millisecond retrieval for real-time analytics.

NASA – Glenn Research Center, Data Analyst, Full-time 40 hours/week, *Aug 2023 – Dec 2023*

Created and implemented real-time visualization systems, merging streaming data workflows to deliver actionable operational insights and enhance testing efficiency.

- Created real-time dashboards utilizing Plotly/Dash, incorporating live data from Google Big Query and Firestore to facilitate mission planning and testing operations.
- Created flexible Python-driven reporting frameworks producing interactive visual representations and dynamic analytical results for both technical and executive stakeholders.
- Honored with the Resilience Award for providing consistent analytical performance in demanding, time-sensitive operational environments.

ANVL, Data Analyst, Full-time 40 hours/week, *Feb 2023 – Aug 2023*

Oversaw comprehensive analytical processes in a fast-paced technology landscape, creating scalable ETL frameworks and dynamic dashboards to enhance time to insight and promote performance enhancement.

- Created and implemented scalable ETL frameworks utilizing DynamoDB, MySQL, and Elasticsearch to improve cross-system data unification and query performance.
- Automated extraction and transformation of data from multiple sources using Python scripting, decreasing the time required to gain insights for identifying trends and anomalies.
- Created interactive analytical dashboards in Power BI and Tableau to pinpoint operational weaknesses.

Data Glacier, Data Science Intern, Part-time 20 hours/week, *Nov 2022 – Feb 2023*

As a Data Science Intern, I executed full-cycle analytical projects within a collaborative, remote-first environment, focusing on the transition from exploratory data analysis to production-ready machine learning models. I contributed to the development of predictive tools by applying rigorous statistical methodologies and iterative model testing to solve complex business challenges.

- Executed the complete Data Science Life Cycle (DSLC) for large-scale datasets, managing the pipeline from initial data ingestion and cleaning to the deployment of predictive proof-of-concept (PoC) models.
- Built and optimized high-performance classifiers using Scikit-Learn and TensorFlow, implementing advanced feature engineering and hyperparameter tuning to maximize model accuracy and interpretability.
- Partnered with cross-functional teams to perform deep-dive exploratory data analysis (EDA), utilizing statistical techniques to uncover key behavioral patterns and derive actionable insights for stakeholder decision-making.
- Developed interactive data products and documentation to streamline the model hand-off process, ensuring technical scalability and alignment with business requirements.

Education

PhD Data Science, National University, January 2026 - Present
Master of Business Administration, Western Governors University, *May 2023 – May 2025*
Masters, Data Analytics, Western Governors University, *June 2021 – May 2022*
Bachelors, Physics, University of Texas at El Paso, *August 2015 – December 2019*

Technical Proficiencies

Competencies: Machine Learning & Deep Neural Networks, Natural Language Processing, Predictive & Prescriptive Analytics, Data Engineering, Scientific Data Visualization, Relational & NoSQL Database Design, Cloud-Native Computing, CI/CD for Analytical Pipelines, AI Governance & Ethical Compliance.

Tools: JupyterLab, Git, Docker, Kubernetes, Tableau, Power BI, Dash, Plotly, MLflow, NVIDIA CUDA/cuDNN, BigQuery, Firestore, Redshift, DynamoDB, Elasticsearch.

Programming: Python (Pandas, NumPy, Scikit-Learn, TensorFlow, PyTorch, Matplotlib, Seaborn, Hugging Face Transformers, Flask), R, SQL, HTML5, CSS3, JavaScript (React, Node.js).