

## EDUCATION

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### Georgetown University

M.S. in Data Science and Analytics ("DSAN"), GPA: 4.0

Washington, D.C.

Aug. 2023 – May 2025

- **Specialized Areas:** Deep Learning, Generative AI, Reinforcement Learning, NLP, and Survival Analysis
- **Honors:** Exceptional Master's Student Award – Top M.S. student across Georgetown's science programs (2025)

### Villanova University

BBA, magna cum laude – Double Major: Economics & Business Analytics, GPA: 3.78

Villanova, PA

Aug. 2017 – May 2021

- **Minor and Concentration:** Political Science (Minor) | Politics, Philosophy & Economics – PPE (Concentration)
- **Study Abroad:** The University of Cambridge, UK; Instep-Wake Forest University PPE

## WORK EXPERIENCE

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### Graduate Researcher, Massive Data Institute — Washington, D.C.

May 2024 – Sept. 2025 (research ongoing)

- Designed and developed FrailNet, a novel deep learning framework for rare event prediction, integrating survival modeling, recurrent architectures, and latent frailty to model sequential, incomplete data in complex systems; co-authoring research paper for 2026 submission (target: Nature Computational Science).
- Applied the model to forecast interstate conflict using dyadic time-series data, achieving state-of-the-art performance (C-index: 0.9796) and outperforming classical and deep learning baselines.
- Developed an incomplete-aware learning framework, incorporating input reconstruction and masking to handle missing data without biasing model training.
- Framed modeling around decision-making under uncertainty, translating hazard-based outputs into interpretable risk signals for real-world applications.

### Co-Founder, Top Shelf Designs, LLC — Scotch Plains, NJ

June 2020 – Present

- Co-found and lead a startup that designs and manufactures shelving products to maximize space in college dorms.
- Leveraged customer feedback and sales data to refine product design and optimize offerings.
- Introduced inventory tracking and demand forecasting, cutting production time by 50% and COGS by 25%.

### Teaching Assistant, Georgetown University — Washington, D.C.

Jan. 2024 – Dec. 2024

- Teach & mentor 100+ students across courses in GIS, Computer Vision, and Data Science & Climate Change.
- Lead 15+ ML tutorials on CNNs, XAI, RL, etc., improving engagement and comprehension.

### Student Ambassador, Georgetown University — Washington, D.C.

Sept. 2023 – Sept. 2024

- Engaged with 1,000+ prospective students and supported DSAN program outreach through events and data-informed recruitment efforts.

### Data Analytics Research Intern, PayAnalytics — Iceland

June 2020 – July 2020

- Researched issues of gender pay gap in the U.S. in pursuit of grant funding that was subsequently awarded.

## RESEARCH & PROJECTS

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### Moon Rover Automation, Georgetown DSAN Program — Washington, D.C.

Sept. 2024 – Jun. 2025

- Developed reinforcement learning models for autonomous lunar rover navigation under uncertainty, focusing on resource detection, route optimization, and hazard avoidance in partially observable environments, in collaboration with academic and NASA-affiliated researchers.
- Designed reward structures and state representations to balance exploration, safety, and efficiency in stochastic terrain conditions.
- Presented findings at StatConnect 2025, communicating model design and performance to a technical audience.

### Code Analysis Agent, Georgetown DSAN Program — Washington, D.C.

Jan. 2025 – May 2025

- Built an LLM-powered code analysis system using agent-based workflows (LangGraph), enabling structured understanding of codebases through dynamic tool usage.
- Integrated retrieval-augmented generation (RAG) with graph-based representations (Neo4j) to extract and query semantic relationships across files.
- Designed a modular pipeline for parsing, embedding, and linking code elements, improving interpretability and navigation of large repositories.

### COVID-19 Economic Relief Analysis, Villanova Economics Dept. — Villanova, PA

Feb. 2021 – Apr. 2021

- Finalist in the Adam Smith Economic Research Competition. Analyzed determinants of PPP loan size awarded to small businesses during the COVID-19 pandemic using regression modeling in STATA.

## SKILLS

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**Languages & Programming:** Python, R, SQL, STATA, Bash, LaTeX, HTML/CSS | JupyterLab, VS Code, Git

**Machine Learning & AI:** PyTorch, TensorFlow, LangChain | RLib, gymnasium | Classical, Deep, and RL Models

**Data Visualization:** Seaborn, Matplotlib, ggplot2, Plotly, Tableau

**Cloud, Big Data & Tools:** AWS, PySpark, Docker | React, Next.js, Quarto | Microsoft Excel, PowerPoint