David Corcoran

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EDUCATION

Georgetown University May 2026
Master of Science in Data Science and Analytics GPA: 3.95

Virginia Tech May 2022
Bachelor of Science in Business Information Technology - *Computer Decision Support Systems Major* GPA: 3.77
Bachelor of Science in Finance - *Investment Management and Chartered Financial Analyst Major*
Economics Minor

WORK EXPERIENCE

Data and Analytics Intern | *NASA* June 2025 – August 2025

- Supported the Aerosciences Evaluation and Test Capabilities (AETC) team, responsible for managing NASA's tier 1wind tunnels.
- Designed and executed a data-driven capital budgeting methodology to evaluate whether to maintain or rebuild a portfolio of 12 wind tunnels.
- Developed cost forecasting models using polynomial regression and non-linear curve fitting techniques to estimate future operational and maintenance expenses and inform Net Present Cost (NPC) analysis.
- Ran Monte Carlo simulations to quantify uncertainty and variability in cost projections and decision outcomes.
- Performed scenario-based sensitivity analysis to evaluate the impact of planning assumptions on investment decisions and prioritization.
- Automated workflows using Python and Gitlab; documented and presented findings in a comprehensive financial assessment report.

Graduate Teaching Assistant | *Georgetown University* May 2025 – August 2025

- Assisted incoming Data Science and Analytics masters students during a required summer course focused on foundational programming skills.
- Graded coursework and coding assignments, offering detailed feedback to enhance student understanding and performance.

Federal Technology Risk Management Associate | *KPMG* July 2022 – July 2024

- Earned DoD Secret Clearance to support sensitive government projects
- Designed and executed Tests of Design (ToDs) and Tests of Effectiveness (ToEs) to assess warehouse SAP IT controls.
- Conducted on-site visits across the US, collaborating with clients to evaluate warehouse IT controls and identify control gaps.
- Authored a Corrective Action Plan, containing an E2E process walkthrough document, risk and control matrix, control gap analysis, and responsibility-accountability matrix to address identified IT process deficiencies.
- Supported the development of a program governance charter, conducted a current-state SoD/ICAM assessment, and created a Microsoft Power BI dashboard to facilitate the enterprise-wide ICAM implementation.

PROJECTS

Vehicle Collision Neural Network Classification Models, Neural Networks and Deep Learning (DSAN 6600)

- Processed over 60,000 image frames extracted from 1,500 annotated dashcam videos, utilizing YOLOv8 to obtain object-level spatial features.
- Created LSTM, GRU, and Transformer-based sequence models to classify vehicle collisions from real-world dashcam footage into no collision/collision categories based on temporal patterns in object features.
- Achieved the highest performance using a GRU-based architecture, with 68% accuracy and a 69% F1 score, highlighting the ability for recurrent neural network models to effectively learn temporal patterns from raw video sequences and object-level features.

Predictive Modeling of Chronic Absenteeism in U.S. School Districts, Statistical Learning (DSAN 5300)

- Collected and preprocessed data from ~12,800 U.S. school districts, integrating demographic, academic, and financial features
- Developed multiple classification models (Neural Networks, Random Forests, Logistic Regression, LDA/QDA, SVMs) to predict absenteeism risk and classify districts into binary and multi-class categories.
- Achieved best binary classification performance using a Neural Network (Accuracy: 73.05%, AUC: 0.815)

Data-Driven Analysis of Success Factors in the Film Industry, Data Science and Analytics (DSAN 5000)

- Extracted a dataset of 1,700 movies and 23 attributes using TMDB and OMDB APIs.
- Applied clustering (K-Means, DBSCAN, etc) and dimensionality reduction techniques (PCA, t-SNE) to analyze genre and financial trends.
- Developed random forest and linear regression models, explaining 65.7% of revenue variability and 30% of Oscar win variability
- Classified movies into genres using Naive Bayes and TF-IDF on movie plots, resulting in 90% accuracy for binary classification.

SKILLS

Programming: Python, R, SQL, JavaScript, HTML, CSS, PHP, VBA, VB.NET, Selenium, Bootstrap
Data Analysis & Visualization: Pandas, NumPy, SciPy, Matplotlib, Seaborn, NetworkX, Plotly, Closeread, Microsoft Power BI, Tableau, Simio
Machine Learning: PyTorch, Keras, TensorFlow, scikit-learn
Miscellaneous: Microsoft Access, Quarto, Jupyter Notebooks, Github, Git, bash