Tom Vija

Virginia Tech, Major in Computational Modeling and Data Analytics
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Education

Virginia Tech, Blacksburg, VA
Bachelor of Science in Computational Modeling and Data Analytics (CMDA)
Expected Graduation: May 2026
Minors: Computer Science, Statistics, Math
Relevant Coursework: Data Structures and Algorithms, Introductory and Intermediate Programming in Python, Probability and Distributions, Statistical Methods, Mathematical Modeling, Data Analytics and Visualization, Regression Analysis.

Experience

Island Beach State Park (May 2021 – August 2024):
Senior Lifeguard ensuring patron safety and rapid emergency response. Led training and mentorship of junior lifeguards, emphasizing clear customer communication and operational efficiency.

Eats2Seats (September 2022 – Present):
Lead Alcohol Vendor and Hawker at Virginia Tech football games, consistently maximizing sales through effective customer engagement, as well as efficient and streamlined service.

Technical Skills

Programming Languages: Python, Java, R, C, Go, HTML
Tools and Technologies: Jupyter Notebooks, Linux, Git, VS Code, R Studio
Core Competencies: Data Manipulation, Statistical Analysis, Machine Learning, Web Scraping, Multi-threading
Soft Skills: Problem Solving, Analytical Thinking, Collaboration, Communication

Projects

Energy Spectra Alignment (CMDA Capstone) **September 2025 – Present**

- Collaborating with Los Alamos National Laboratory (LANL) to align high-resolution nuclear sensor data by analyzing and improving current methods for energy spectra alignment across hundreds of detector pixels.

Wordle Solver **May 2025**

- Developed an automated Wordle solver in Python, leveraging the Selenium library for web interaction and employing a term-frequency based strategy to optimize guess efficiency. Also engineered a supplementary Python script to systematically benchmark the performance of various starting words, quantifying their impact on solution attempts.

Media Bias & Stance Analysis of Russian-Ukraine Conflict Reporting **April 2025**

- Developed a Natural Language Processing (NLP) classification model in Jupyter Notebooks, utilizing Sentiment Analysis and TF-IDF, to quantitatively differentiate and predict the geopolitical stance (pro-Russian vs. pro-Ukrainian) of news articles.

Dimensionality Reduction & Clustering of US State Demographics **March 2025**

- Used Z-score normalization, K-Means clustering, and Principal Component Analysis (PCA) to quantify inter-state dissimilarities and develop an interactive scatterplot for visualizing underlying demographic patterns and relationships.

GPU-Based Collatz Conjecture Implementation Using CUDA **November 2024**

- Developed an optimized algorithm for the scalable computation of Collatz sequence stopping times, addressing the Collatz Conjecture for a large integer range N. Implemented massively parallel processing using NVIDIA CUDA, achieving significant performance enhancements and drastically reducing computation time.