

Daniel Palamarchuk

LOCATION Blacksburg, VA HOME PHONE (781) 670-0463 EMAIL d4n1elp@vt.edu WEBSITE <https://danilka4.github.io>

Education	MEng in Data Analytics & AI VIRGINIA TECH 3.92 GPA	Expected May 2024
	BS in Computational Modeling & Data Analytics COLLEGE OF SCIENCE, VIRGINIA TECH 3.72 GPA	May 2023
	BS in Computer Science COLLEGE OF ENGINEERING, VIRGINIA TECH 3.73 GPA	

Work Experience	Computer Science Teacher RUSSIAN SCHOOL OF MATHEMATICS - HERNDON, VA Taught and created curriculum for two Python classes. The first is an introduction to Python and game development , centered around the elementary school level. The second is an introduction to data analytics , visualization, and linear algebra , centered around the middle school level.	May 2023-Present
	Undergrad/Grad Research Assistant VIRGINIA TECH - BLACKSBURG, VA Under Dr. Christopher North in collaboration with the Savannah River National Laboratory, found ways to effectively visualize high dimensional temporal word2vec embeddings relating to nuclear power using PCA, t-SNE, MDS, and UMAP.	February 2023-Present
	Undergraduate Research Assistant VIRGINIA TECH - BLACKSBURG, VA Under Dr. Andrew Scerri and Dr. Christian Lucero, used Structural Data Modeling to analyze Virginia state environmental bill and lobbying data. Created a web dashboard using R and the flexdashboard package to visualize findings. Demonstrated uniqueness of climate legislation with respect to other categories of legislation using Chi Square Test of Homogeneity. A research paper on the findings is currently in progress. This experience required me to work with professors and students across the political science and data science departments and to satisfy the qualitative and quantitative needs of both	November 2021-May 2023
	Math Teacher RUSSIAN SCHOOL OF MATHEMATICS - RESTON AND HERNDON, VA Substituted high school geometry, elementary school arithmetic, and middle school algebra. Math courses taught included math competition preparation and preparation for the IOWA test . Also taught a course on HTML & vanilla javascript , in addition to two courses in the Python programming language. Produced curriculum for one of the Python courses. In addition, did expense accounting for the entire school	2019-May 2023
	Senior Tutor RUSSIAN SCHOOL OF MATHEMATICS - WINCHESTER, MA AND RESTON, VA Tutored kids ranging K-12 in: geometry, algebra and math team preparation	2015-2019

Projects	Word Difficulty Estimation Model TOOLS: R, VIM, \LaTeX , GIT, MATLAB, PYTHON Predicted the difficulty and participation of a Wordle word with a team using several models. Initial analysis included association rules and frequency analysis. The models used to predict the difficulty were a linear model, neural network, and k-nearest neighbors. Participation prediction was made using an ARIMA forecasting model	February 2023
	Currency Profitability Model	February 2022

TOOLS: R, VIM, L^AT_EX, GIT, MATLAB

Maximized profitability through purchasing bitcoin and gold in late 2020-early 2021 with a team using Q-Learning and self made models

Show Recommendation System

Summer 2021

TOOLS: R, RSTUDIO, GIT

Created a collaborative filtering recommendation system for Japanese animation which predicted the top-N recommendations

Vespa Wasp Identification System

February 2021

TOOLS: R, RSTUDIO, L^AT_EX, MATLAB

Created a notebook with a team that used exploratory data visualization, Gaussian Naive Bayes, binary image classification, and frequency analysis to identify Vespa Mandarinias wasps in Oregon

Data Visualization of Virginia Covid Cases

Summer 2020

TOOLS: R, RSTUDIO, VIRGINIA DATA PORTAL

Created an exploratory data visualization notebook that graphed covid cases within Virginia

Honors	VT Outstanding CMDA Senior award (\$1000)	March 2023
	VT CMDA Research Grant (\$1000)	January 2023
	Math Contest in Modeling (MCM) Meritorious Winner	February 2022
	VT CMDA Research Grant (\$1500)	January 2022
	Dean's List	2019-2022

Skills	Spoken Languages: Russian, English
	Computer Languages: R, C, Python, Java, Matlab, HTML, CSS, JS, Lua
	Tools: VIM, GIT, Tidyverse, flexdashboard, plotly, L ^A T _E X, Linux, OpenMP, MPI

Conferences	Palamarchuk, D. , Gillespie, J., Mukora, V., (Jan. 2023). "Two Time Participants' Reflection on MCM." In: Joint Mathematics Meetings. Boston, MA.
	Paragas, S., Palamarchuk, D. , Scerri, A., Lucero, C., Alexander, A., (Oct. 2022). "Using Network Analysis to Study Relationships in Climate and Energy Legislation." In: 2022 SACNAS National Diversity in STEM Conference.