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 Expected May 2024
VIRGINIA TECH

3.92 GPA

BS in Computational Modeling & Data Analytics May 2023
COLLEGE OF SCIENCE, VIRGINIA TECH

3.72 GPA

BS in Computer Science
COLLEGE OF ENGINEERING, VIRGINIA TECH

3.73 GPA

Work Experience

Programming Teacher May 2023-Present
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.

Undergrad/Grad Research Assistant February 2023-Present
VIRGINIA TECH - BLACKSBURG, VA

Under Dr. Christopher North, found relationships between temporal word2vec embeddings relating to nuclear power using PCA and MDS

Undergraduate Research Assistant November 2021-May 2023
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. 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

Substitute Teacher 2019-May 2023
RUSSIAN SCHOOL OF MATHEMATICS - RESTON AND HERNDON, VA

Substituted high school geometry, elementary school arithmetic, and middle school algebra. Math courses taught included math team 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

Senior Tutor 2015-2019
RUSSIAN SCHOOL OF MATHEMATICS - WINCHESTER, MA AND RESTON, VA

Tutored kids ranging K-12 in: geometry, algebra and math team preparation

Projects

Word Difficulty Estimation Model February 2023
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

Currency Profitability Model February 2022
TOOLS: R, VIM, LaTeX, 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, LaTeX, MATLAB

Created a notebook with a team that used exploratory data visualization, Gaussian Naive Bayes, binary image classification, and frequency analysis to identify Vespa Mandarinia 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, LaTeX, 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.