

# Daniel Palamarchuk

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Education	<b>Master of Science in Computer Science</b> 2022-May 2024 VIRGINIA TECH - BLACKSBURG, VA - SANGHANI CENTER FOR AI & DATA ANALYTICS 3.96 GPA - Finalist for 2024 Torgersen Graduate Student Research Excellence Award - <a href="#">Thesis: Temporal Topic Embeddings with a Compass</a>
	<b>Dual Bachelor Degrees in Data Analytics and Computer Science</b> 2019-May 2023 VIRGINIA TECH - BLACKSBURG, VA - COLLEGES OF SCIENCE AND ENGINEERING 3.72 GPA - VT Outstanding CMDA Senior - Deans List 2019 to 2023 - Minors in Political Science, Mathematics
Experience	<b>Graduate Research Assistant</b> February 2023-Present VIRGINIA TECH - BLACKSBURG, VA - SANGHANI CENTER FOR AI & DATA ANALYTICS Under advisor Dr. Chris North (Computer Science): <ul style="list-style-type: none"><li>Created <b>Temporal Topic Embeddings with a Compass</b> (TTEC), a <b>NLP</b> method for dynamic topic modeling using temporal word2vec and doc2vec vectors and finding clusters in them (Python, Cython, Gensim)</li><li>Created visualization methods combining dynamic topic modeling and dynamic word embeddings</li><li>Scaled method to dataset of <b>5.5 million</b> documents to pinpoint corpus events and generate insight</li><li>Performance matched transformer state of the art (BERTopic)</li><li>Gave weekly presentations to team of six, including members from the Savannah Riven National Laboratory, on state of development</li><li>First author of paper submitted to <b>IEEE VIS 2024</b> describing TTEC and its resulting visualizations</li></ul>
	<b>Computer Science Teacher</b> May 2023-Present RUSSIAN SCHOOL OF MATHEMATICS - HERNDON, VA <ul style="list-style-type: none"><li>Taught self-made 6-week game development course for grades 5-7 that used the PyGame package and taught object-oriented programming and logic flow</li><li>Developed and taught 6-week introduction to <b>graph theory and social networks</b> class for grades 8-10 and introduction to linear algebra and <b>data analytics</b> class for grades 6-8, both of which utilized data science Python packages</li><li>Developed and taught 6-week introduction to web development class in HTML, CSS, and JavaScript</li><li>Developed course for IOWA test preparation for 50 students</li><li>Filed accounting for school and regional expenses</li></ul>
	<b>Undergraduate Research Assistant</b> November 2021-May 2023 VIRGINIA TECH - BLACKSBURG, VA Under Dr. Andy Scerri (Political Science) and Dr. Christian Lucero (Data Science): <ul style="list-style-type: none"><li>Analyzed Virginia state environmental bill, educational bill, and donation data using classical statistical methods, including linear regression, chi squared tests, and community detection</li><li>Discovered trends that affected passage rates of bills in committees and in general</li><li>Created and published a <a href="#">web dashboard</a> using R and the flexdashboard package to visualize findings</li><li>Collaborated with professors and students across the political science and data science departments to satisfy the qualitative and quantitative needs of both</li><li>Co-authored <b>journal paper</b> on findings (under review)</li></ul>
	<b>Math Teacher</b> 2019-May 2023 RUSSIAN SCHOOL OF MATHEMATICS - RESTON AND HERNDON, VA <ul style="list-style-type: none"><li>Substituted high school geometry, middle school algebra, and elementary school arithmetic</li><li>Taught courses on math competition preparation, preparation for the IOWA test, introduction to HTML &amp; JavaScript, and introduction to Python</li><li>Conducted expense accounting for the entire school</li></ul>
	<b>Senior Tutor</b> 2015-2019 RUSSIAN SCHOOL OF MATHEMATICS - WINCHESTER, MA AND RESTON, VA <ul style="list-style-type: none"><li>Tutored kids ranging K-12 in: geometry, algebra and math team preparation</li><li>Printed assignments for teachers leading up to class</li></ul>

Honors	VT Outstanding CMDA Senior award	March 2023
	VT CMDA Research Grant (\$1000)	January 2023
	Dean's List	2019-2023
	Math Contest in Modeling (MCM) Meritorious Winner	February 2022
	VT CMDA Research Grant (\$1500)	January 2022
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Conferences	<b>Palamarchuk, D.</b> , Williams, L., Mayer, B., Danielson, T., Faust, R., Deschaine, L., North, C., (Oct. 2024). "Visualizing Temporal Topic Embeddings with a Compass." In: IEEE Transactions on Visualization and Computer Graphics. DOI: <a href="https://doi.org/10.1109/TVCG.2024.3456143">10.1109/TVCG.2024.3456143</a> .	
	Scerri, A., Bromley-Trujilo, R., Hao, F., Alexander, A., Lucero, C., <b>Palamarchuk, D.</b> , Paragas, S., (May 2023). "Who influences climate and energy policy in VA?" In: State Politics and Policy Conference 2023.	
	Mukora, V. K., Gillespie, J., <b>Palamarchuk, D.</b> , (Jan. 2023). "Two Time Participants' Reflection on MCM." In: Joint Mathematics Meetings. Boston, MA.	
	Paragas, S., <b>Palamarchuk, D.</b> , 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.	
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Skills	Computer Languages: Python, R, C, Java, cython, Matlab, HTML, CSS, JavaScript, Lua Tools: MySQL, sqlite, networkx, TensorFlow, Numpy, Tidyverse, Pandas, flexdashboard, plotly, d3, GIT, $\LaTeX$ , Linux, vim, OpenMP, MPI, PyGame Spoken Languages: English (native), Russian (native), Spanish (proficient)	