Noah L. Donald, Ph.D.

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GitHub: github.com/ndonald42 | U.S. Citizen | Eligible for security clearance

Professional Summary

Ph.D. in Physics with experience in computational modeling, data analysis, and algorithm development for scientific problems. Proficient in Python, C++, Mathematica, and Excel, with a strong background in numerical methods, statistical analysis, and optimization. Skilled in synthesizing and communicating complex technical information to diverse audiences. Proven ability to work independently and collaborate with cross-functional teams in research environments. Adept at learning new domains quickly, with a track record of producing actionable insights through rigorous analysis. Seeking government contracting roles to apply analytical and computational expertise to national security challenges.

Education

William and Mary, Williamsburg, VA
Ph.D., Physics (Theoretical Focus) | 2020 – 2025
M.S., Physics | 2020 – 2022
GPA 3.92/4.00

Ohio State University, Columbus, OH
B.S., Physics (Honors, Magna Cum Laude) | 2016 – 2020
B.S., Mathematics (Honors, Magna Cum Laude) | 2016 – 2020
GPA 3.74/4.00

Skills

Programming: Python, C++, Mathematica, Excel, LaTeX

Analytical: Statistical Analysis, Numerical Modeling, Optimization, Probability Theory, Data Visualization, Graph Theory, General Relativity, Quantum Field Theory

Technical: Basic laboratory experience (including in a research setting)

Soft Skills: Collaboration, Communication, Time Management, Organization, Scientific Writing

Language: English (Native), German (Intermediate)

Relevant Experience

William and Mary, Williamsburg, VA
Graduate Researcher | 2020 – 2025

- Developed a theoretical model with emergent hierarchical relationships in a complex physical system, utilizing Mathematica/Python software for numerical study and optimization, achieving a predictive framework. (2024 – 2025)
- Designed and implemented algorithms to evaluate propagation in defective physical systems, leveraging Mathematica/Python for simulations to generate large data sets and statistical methods to quantify uncertainty. (2023)
- Built a predictive physical model with enhanced system stability using C++-based PyR@TE3 software and Mathematica/Python, integrating statistical analysis and scenario testing to assess outcomes. (2021 – 2022)

- Served as a Teaching Assistant and Grader, delivering lectures on quantitative methods, mentoring students in computational problem-solving, and managing data-driven assignments, enhancing communication and leadership skills. (2020 – 2022, 2024 – 2025)

- Coursework: General Relativity, Quantum Field Theory, Quantum & Nonlinear Optics

Ohio State University, Columbus, OH
Undergraduate Researcher | 2016 – 2020

- Utilized C++, Mathematica, and Python-based algorithms to compute topological properties of a complex physical system in condensed matter theory. (2019 – 2020)

- Researched combinatorial properties of graph structures using advanced mathematical techniques. (2019)

- Coursework: Probability Theory, Combinatorics, Abstract Algebra, Computational Physics, C++, Linear Algebra & Differential Equations, Differential Geometry, Advanced Physics Lab, German, Microeconomics

Selected Journal Publications

- C.D. Carone and N.L. Donald, "Tuning towards the edge of a dark abyss: Implications of a tuning paradigm on the hierarchy between the weak and dark scales", Phys. Rev. D 111, no. 3, 035021 (2025). [Demonstrates theoretical modeling and data analysis]

- C.D. Carone and N.L. Donald, "Towards a quantum field theory description of nonlocal spacetime defects", Class. Quantum Grav. 41, 095003 (2024). [Highlights algorithm design]

- J. Boos, C.D. Carone, N.L. Donald, and M.R. Musser, "Asymptotically safe dark matter with gauged baryon number," Phys. Rev. D 107, no. 3, 035018 (2023). [Shows predictive modeling]

Awards & Accomplishments

Roy L. Champion Award | 2024

- Awarded to a physics graduate student who has demonstrated outstanding research achievement.

DAAD RISE Fellowship | 2018

- Worked on an ultra-high vacuum chamber to collect atomic level data regarding the surface structure and composition of various crystallin substrates at the University of Duisburg-Essen.

Germany for STEM Students | 2015

- Engineered a water filtration device with applications in third-world countries. I was awarded a weeklong experience exploring scientific institutions in Germany.

Professional Presentations

- *"Towards a Quantum Field Theory Description of Nonlocal Spacetime Defects"*. Graduate & Honors Research Symposium, College of William & Mary, Williamsburg VA, March 2024.

- *"Asymptotically Safe Dark Matter with Gauged Baryon Number"*. Phenomenology 2023 Symposium, University of Pittsburgh, Pittsburgh PA, May 2023.

- *"A Symmetric Chromatic Function for Voltage Graphs*". The 62nd Midwest Graph Theory Conference, Marion OH, October 2019.

Activities

- Sports: Soccer, Weightlifting, Running, Climbing