

# Nathan Whittington

Knoxville, Tn — nwhitti1@vols.utk.edu — (865)621-2500  
github.com/NathanW46 — linkedin.com/in/nathan-whittington

EDUCATION

- **University of Tennessee, Knoxville** Knoxville, TN  
*B.S. Physics and Mathematics – GPA: 4.0* Aug. 2024 - Present
  - **Roane State Community College** Harriman, TN  
*A.S. General Science – GPA: 4.0, President’s List* Aug. 2022 - May 2024

## EXPERIENCE

- **Undergraduate Research – Mirror Matter Search** Knoxville, TN  
*University of Tennessee* Aug. 2024 - Present
    - Experimental analysis of a hidden-sector dark matter search investigating neutron–mirror neutron oscillations at Oak Ridge National Lab.
    - Investigating potential mass degeneracy and a neutron–mirror neutron transition magnetic moment.
  - **SULI Summer Intern** Upton, NY  
*Brookhaven National Laboratory* Jun. 2025 - Aug. 2025
    - Implemented realistic material reflectivity modeling and material maps in the *Synchrotron Radiation Workshop (SRW)* simulation package.
    - Integrated *XrayDB* for optical constants and reflectivity calculations; contributed upstream support for multilayer and coated mirrors.
  - **Next-Gen Pathways to Computing Intern** Oak Ridge, TN  
*Oak Ridge National Laboratory* Jun. 2024 - July 2024
    - Developed a Particle Swarm Optimization algorithm to determine crystal unit cell orientation from Laue diffraction patterns.

## AWARDS

- Outstanding First-Year Student, University of Tennessee *May 2025*
  - Calculus-Based Physics Award, Roane State Community College *May 2024*
  - Best Student Poster Presentation, ORNL Joint Users Meeting *Aug. 2025*
  - OLCF Hands-On HPC Crash Course Certificate *July 2024*
    - MPI, OpenMP, GPU programming, and ML (Oak Ridge Leadership Computing Facility)

## PRESENTATIONS & PUBLICATIONS

- On the Neutron Transition Magnetic Moment
  - Analysis of Dark Mirror Neutron Search Experiment
    - AsUReS UTK (oral), EuReCa UTK (poster), ORNL Joint Users Meeting (poster)
  - Automating Crystallography Data Collection - Poster

## ACTIVITIES

- **Society of Physics Students** - Secretary Aug. 2024 - Present
  - **UTK Trombone Studio** Aug. 2024 - Present
  - **UTK Academic Quiz Bowl** Aug. 2024 - Present
  - **RoaneNET** - Computer Refurbishment Volunteer Jun. 2022 – Aug. 2022

## SKILLS

- **Computing:** Python, C++, ROOT, Java, L<sup>A</sup>T<sub>E</sub>X, Linux, Git, High Performance Computing
  - **Other:** KiCad / PCB Design, SOLIDWORKS, Fusion 360, Cura, SMD Soldering, Computer Hardware