Rajeev Persaud

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Professional Summary

Motivated Honours Physics student at the University of Waterloo with strong analytical, computational, and problem-solving skills. Interested in condensed matter, optical physics, and quantum systems, with hands-on experience in Python-based data analysis, simulation, and experimental design. Eager to contribute to research exploring quantum materials and superconductivity using optical and diagnostic techniques.

Education

University of Waterloo Waterloo, ON
Candidate for Bachelor of Science in Honours Physics *Expected 2029*

Research & Experimental Experience

Waterloo Rocketry – Payload Division Sept 2025 – Present
University of Waterloo

- Designed a compact PCB for a fiber-optic gyroscope used for in-flight attitude sensing, optimizing layout for minimal signal noise.
- Collaborated with over 100 team members across avionics and recovery subsystems to ensure electrical and mechanical compatibility.

AI Exoplanet Classification Research Project Sept 2025
NASA Space Apps Challenge

- Developed a machine-learning classifier for exoplanet detection using NASA's Kepler dataset, achieving 80% accuracy.
- Applied TensorFlow and scikit-learn for feature extraction, model tuning, and validation.

Technical Projects

Spring Fling Competition | *Python* May 2024 – June 2024

- Designed and built a linear spring launcher applying Hooke's Law to predict projectile motion.
- Derived the spring constant experimentally and calibrated launch settings, achieving 96% accuracy.
- Achieved a 4% mean error between theoretical and experimental ranges, placing 2nd among 40+ teams.

Mini-Rocket Competition | *Python* May 2023

- Led design of a chemical-propelled mini-rocket focusing on stability and altitude optimization.
- Matched predicted and observed heights within 3%, earning 1st place among 10+ teams.

Teaching & Outreach

Math & Physics Education Tool | *mathandmatter.com* April 2025 – Present

- Attracted over 15,000 monthly users by creating accessible explanations of complex physics topics.
- Used Obsidian and LaTeX to transform advanced concepts into clear, visual lessons.
- Reached audiences in 30+ countries through organic search and educational outreach.

Math & Physics Tutor Sept 2025 – Present

- Helped over 10 students weekly strengthen understanding of core concepts in Linear Algebra, Calculus, and Classical Physics.
- Adapted teaching methods to student learning styles, providing both analytical and graphical explanations.

Certifications

- Workplace Hazardous Materials Information System (WHMIS) — University of Waterloo
- Cryogenics Safety Training — University of Waterloo
- Chemical Waste Segregation — University of Waterloo
- Compressed Gas Safety Certification — University of Waterloo
- Engineering Machine Shop Safety Training — Faculty of Engineering, University of Waterloo

Skills

Soft Skills: Analytical, collaboration, adaptability, initiative, perseverance, receptiveness to feedback
Lab Skills: Error analysis, curve fitting, uncertainty analysis, use of oscilloscopes and signal processing tools
Technical Languages: Python, SQL, LaTeX, JavaScript, CSS, HTML
Libraries & Frameworks: NumPy, SymPy, Pandas, React, Tailwind, 3JS, Next.JS
Developer Tools: TensorFlow, scikit-learn, Git