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. Currently part of a 100+ person team designing parts for a fiber-optic gyroscope for rocket payload. Most enthusiastic about in contributing 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

Fiber-Optic Gyroscope for Rocket Payload — Sept 2025 – Present
Waterloo Rocketry — University of Waterloo, ON

- Designed a printed circuit board among a 10+ member team that reduced noise by 20%, responsible for gyroscope data transition and interpretation
- Presented weekly updates in-front of 10-100+ members ensuring cross-team alignment across 8 rocketry design division for 2026 launch

NASA AI Exoplanet Classification Project — Sept 2025
NASA Space Apps — University of Waterloo, ON

- Developed a AI classifier for exoplanet detection using NASA's Kepler dataset, achieving 80% accuracy
- Improved the reliability of the classification pipeline by optimizing classification through TensorFlow for reducing classifications errors by 8%

Undergraduate Physics Laboratories — Sept 2024 – Present
Honours Physics Labs — University of Waterloo, ON

- Executed and analyzed Spectrometry, Nuclear Decay, and Electromagnetic Induction experiments to study precision measurement, decay models, and material properties
- Improved reproducibility and analysis speed for multi-week experiments by automating curve-fitting and uncertainty propagation in Python

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.

Side Projects & Volunteer

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

- Attracted over 15,000 peak monthly users by creating accessible explanations of complex physics topics
- 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, 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, ClickUP