



Jishnu Khanna

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ACADEMIC & CO-OP STATUS

BSc. Engineering Physics(Nano) with Math minor, University of Alberta	Class of 2029
Cumulative Grade Point Average	3.8/4.0
Completed Academic Terms	4 of 8
Completed Co-op Work Terms	0 of 5
Availability	12 months

TECHNICAL SKILLS

Design: Altium PCB design, Inkscape, Lyx, Canva, Spyder, LT Spice, Tinkercad, Solidworks

Programming: Python, Java, MATLAB

Equipment: Ellipsometer, Raman spectroscopy, Spin coater, Optical microscopy, 3d printer, Soldering, Laser CO2 cutter, Wet deck cleaning, Oxygen Plasma treatment, Cricut cutter, Cold cut saw, UV Vis spectroscopy, Photoluminescence spectroscopy, HF dip

MS Office: Excel, Word, Powerpoint, Teams

Data Analysis: Origin, CompleteEase, Logger Pro

PUBLICATIONS

- **Khanna J.**, Czarnecki A., & Marchand R. (2026). Sun-synchronous orbits, quadrupole deformation of Earth, and analemma. *Canadian Journal of Physics*, 104, 1–10.
- Czarnecki A., & **Khanna J.** (2026). False-vacuum decay and flaws in Frampton’s model of the origin of life. *Acta Physica Polonica B Proceedings Supplement*, 19(2), 1.

WORK EXPERIENCE

Research Assistant: AMD Lab May 2026 - Present
Electrical and Computer Engineering Department, University of Alberta

- Optimizing growth parameters for WTe2 thin films using Pulsed Laser Deposition and using them in electronic devices(Transistors).
- Using QuantumATK software to run Density Functional theory Simulations to elucidate band gap values and conductance.
- Working with ISO 6 cleanroom to clean substrates and characterizing samples with XRD, Raman and 4PP measurements.
- Preparing technical documentation to record the optimization parameters and presenting at weekly meetings.

Research Assistant: UATLS-15 Jan 2026 - Apr 2026
Electrical and Computer Engineering Department, University of Alberta

- Collaborated with Fedosejev's lab to design a mechanical mount for a mirror that will correct optical aberration in beamline path of University of Alberta 15TW Laser.
- Used SOLIDWORKS to design the initial prototype of mount and tested it in the real world by 3D printing.
- Set up Mach Zehnder Interferometer on an optical bench for characterizing the optical distortion in the wavefront.
- Prepared technical reports to record the progress of the project.

Research Assistant: Shankar Lab

Sep 2025 - Dec 2025

Electrical and Computer Engineering Department, University of Alberta

- Worked closely with graduate students to study the optical properties of new organic semiconductors and expanded the optical database by studying new compounds.
- Collaborated with the Lab group in thin film formation by various techniques such as spin coating and drop coating on different types of substrates in an ISO 7 cleanroom.
- Wrote clear reports about the experiments and contributed to the research papers by drafting sections about Ellipsometric analysis.
- Won a faculty wide Outstanding Research Performance award during the poster presentation from 69 participants.

Research Assistant

Jul 2025 - Aug 2025

Department of Physics, University of Alberta

- Co-authored an article titled 'Sun synchronous satellite orbits and Analemma', which is published in the *Canadian Journal of Physics*.
- Prepared presentations on various scientific topics such as Analemma and wrote the first draft of paper.
- Used MATLAB and Spyder to make simulations in order to develop a deeper understanding of Celestial mechanics.
- Drew clear illustrations in the paper using software such as Inkscape and Asymptote.

CERTIFICATES & TRAINING

WHMIS Chemical Safety Certificate
Lab Safety and Chemical Safety Certificate
Hazardous Waste Management Certificate
Laser Safety Certificate
Workplace Violence harassment prevention Certificate
Concepts in Biosafety Certificate

AWARDS & SCHOLARSHIPS

Dean's Research Award- University of Alberta,	January 2026
University of Alberta International Undergraduate Scholarship	September 2025
Dean's Research Award- University of Alberta,	September 2025
University of Alberta International admission scholarship	September 2024
University of Alberta's Regional Excellence Award	September 2024
Dr Eric Newell, LLD (Hon) Entrance Scholarship	September 2024

COMMUNITY INVOLVEMENT

Academic Peer Tutor - Residence Services, UAlberta	September 2025 - Present
Kitchen Crew Helper - Hope Mission	September 2024 - Present