

Utkarsh Patel



Graduation- Motilal Nehru College (DU)
Post-Graduation- Hansraj College (DU)
Currently enrolled as a Ph.D. scholar in the
Department of Physics, IIT Bhilai.

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ACADEMIC QUALIFICATIONS:

Name of Institution	Year of Passing	Degree	Performance
Hansraj College, University of Delhi (Delhi)	2018	Master of Science, Specialization in Astrophysics, GTR and Electronics.	62.35 %
Motilal Nehru College, University of Delhi (Delhi)	2016	Bachelor of Science, Honors in Physics	79.60 %
Archies Senior Secondary School, Kanpur (U.P)	2013	Intermediate (C.B.S.E. Board)	83 %
Archies Higher Secondary School, Kanpur (U.P)	2011	High School (C.B.S.E. Board)	96%

TECHNICAL SKILLS:

Programming Languages: Java, C, C++, Python, MATLAB (Beginner level), Wolfram Mathematica (Intermediate Level)

Web Development: HTML, XML

Database Tools: Microsoft SQL Server

Other Tools: Microsoft Office, Android Studio, Arduino Programming, Machine learning through Python.

FORMAL TALKS / WORKSHOPS ATTENDED:

- Delivered a one-hour talk at Indian Institute of Physics, Bhubaneswar on the topic "SIDM as a solution to small scale crisis" on 14th March 2022.
- Successfully completed a 5-day workshop on ATHENA++ and GWPY simulations at ASTROWIN2019 (Winter School on Astronomy).
- Worked under Dr. Seema Vats for a project On Properties and behavior of certain Crystals under electromagnetic sensations.
- Attended lecture on 'Chile: The World Capital of Astronomy' by Guillermo A.Blanc. at Physics Dept. (D.U.).
- Attended talk on 'Hierarchy problem in physics' at Physics Dept. (D.U.).
- Attended lecture on 'General theory of relativity' by Ajith Parameswaran at St. Stephen College.

- Attended conference on 'Introductory String theory' by Shinji Hirano at Physics Dept. (D.U.).
- Participated in the annual physics Visitors Program -2017 organized by the Physics Dept. (D.U.) on 27 March 2017.

TRAINING / PROJECTS COMPLETED:

- 2-months certification course titled Data-driven Astronomy by The University of Sydney on Coursera. Certificate earned on Sunday, June 23, 2019, 7:42 AM GMT.
- 1-month certified internship for physics content development at Evelyn Learning Systems as SME physics in March 2019.
- 2-months Certification course in C++ and SQL programming languages from Microvision Technologies Institute, Kanpur, in 2012.
- 2-months Certification course in JAVA core programming language from Microvision Technologies Institute, Kanpur, in 2013.
- Successfully completed an electronics project under Dr. Vinay Gupta (University of Delhi) on 'Home automation using gesture control and voice recognition' using Arduino operated Bluetooth and radio-frequency transmission.
- 2-months Upper-Intermediate Spoken English course from British Council, New Delhi, from March 2019 to May 2019.
- A certified 2-week "Online Patent Course by Turnip Innovations" from 26-Feb 2021 to 12-March 2021.
- Attended a 1-month online Summer School titled "Summer School on High Energy Physics" organized by SPRACE-Brazil from 22-February 2021 to 19-March 2021.
- A certified project titled "Smart backgrounds in simulation data using neural networks" under "Wolfram India Winter School 2022(WIS22)" held from December 2021- January 2022.
- Currently enrolled in a project titled "Motion in fractional dimension space-time" under "Wolfram International Summer School 2022(WSS22)" held in Illinois-USA in hybrid mode.

FIELD OF INTEREST:

- As a student of Physics, I have a great interest in the field of Computational Astro-particle physics and cosmology. I always read books and articles related to the subject and try to keep myself up-to-date with the current ongoing in the field. I want to pursue my career ahead in this field with my wholehearted dedication and passion. I would like to see myself working in one of the space research organizations in the future and will work hard to achieve my goal.

POSITIONS OF RESPONSIBILITY:

- Coordinator for Physics Department in the IIT Bhilai Student Senate for the academic year 2021-2022.
- Successfully volunteered for IIT Bhilai Annual Convocation Programme 2022.
- Successfully coordinated the "Physics Journal Club" for the year 2019 during the first year of my PhD.
- Successfully co-founded the "Quantum Leap Club" related to Quantum Computing during the first year of my PhD.
- Teaching Assistant for the course of Particle Physics, C programming language during my PhD.
- Teaching Assistant for the Physics lab of B. Tech 1st year students during my PhD.
- Successfully coordinated star gazing events through the institute's telescopes for students during the first year of my PhD.
- Creative Editor, Editorial Board, School Annual Magazine.
- Article Writer, Physics Department Annual Magazine, Motilal Nehru College.
- School Captain for the year 2012-13.

EXTRACURRICULAR ACTIVITIES:

- Secured first position in Inter School Dance Competition held at D.P.S Azad Nagar, Kanpur
- Secured first position in Inter School Debate Competition held at A.H.S.S., Kanpur
- Won the best athlete award at Udaan 2011 held at A.H.S.S., Kanpur
- **Hobbies** – In my leisure time, I like to listen to music, stream YouTube and play cricket.
- **Other Skills** – Touch Typing.

List of Publications:

- Published a Paper titled “**LHC signatures of sterile neutrinos in a minimal radiative extended seesaw framework**” by [Sudhanwa Patra \(Indian Inst. Tech., Bhilai\)](#), [Utkarsh Patel \(Indian Inst. Tech., Bhilai\)](#), [Purushottam Sahu \(Indian Inst. Tech., Bhilai\)](#) in journal Int.J.Mod.Phys.A 37 (2022) 01, 2150263(IJMPA) with DOI: [10.1142/S0217751X21502638](#) and Arxiv with arxiv number: e-Print: [2201.07441](#) [hep-ph].
- Published a Paper titled “**Numerically analyzing self-interacting dark matter**” by [Utkarsh Patel \(Indian Inst. Tech., Bhilai\)](#), [Sudhanwa Patra \(Indian Inst. Tech., Bhilai\)](#) on Arxiv with arxiv number: e-Print: [2204.11551](#) [hep-ph]. Paper has also been submitted to (and is under review) PRD journal.
- Published a single author Wolfram Project Notebook titled “**Implementing Smart Background in Particle Detectors Simulated Data Using Neural Networks**” by Utkarsh Patel in the Notebook Archive (2022), <https://notebookarchive.org/2022-01-5khjuy4> during WIS22.

DECLARATION:

The Information presented above is correct and valid to the best of my knowledge.

Utkarsh Patel
July 2022