

# Devansh Shukla

**Five Years Integrated Masters of Science in Physics**  
Department of Physics  
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## RESEARCH INTEREST

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General relativity and Cosmology.

## EDUCATION

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<b>2018 - 2023</b>	<b>Five Years Integrated M.Sc. (Physics)</b> Department of Physics, Sardar Vallabhbhai National Institute of Technology Surat, India ( <a href="http://svnit.ac.in">svnit.ac.in</a> )	CGPA: 9.64/10 (VIII sem)
<b>2016 - 2018</b>	<b>Senior Secondary Education</b> Kendriya Vidyalaya No.1 Sagar Madhya Pradesh, India	93.0%
<b>2014 - 2016</b>	<b>Higher Secondary Education</b> Kendriya Vidyalaya No.1 Sagar Madhya Pradesh, India	CGPA: 10/10

## RESEARCH EXPERIENCE

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<b>2022</b>	<b>Orbital motion of a test particle in STVG gravity around a static spherically symmetric solution</b> <b>Advisor:</b> Prof. Kamlesh Pathak This project involved examining the existence of a static spherically symmetric solution in the Scalar-Tensor-Vector Gravity and developing an effective potential to compute the radius of the innermost stable circular orbit (ISCO) for timelike and lightlike trajectories. <a href="https://arxiv.org/abs/2211.02008">[https://arxiv.org/abs/2211.02008]</a>
<b>5-30th July 2021</b>	<b>Summer Student: Hamburg International Summer School Particles, Strings &amp; Cosmology</b> Department of Physics, Universität Hamburg and DESY [ <a href="#">certificate</a> ] Lessons on general relativity, QFT, modern topics in cosmology, particles, string theory with some basic German culture and language courses.
<b>12-23 July 2021</b>	<b>International Summer School on The interstellar Medium on Galaxies from the Epoch of Reionization to the Milky Way</b> [ <a href="#">ISM</a> ; <a href="#">certificate</a> ] observational constraints, the interpretative tools and the theoretical frameworks used for studying the interstellar medium in galaxies from the epoch of reionization to contemporary Universe
<b>7-18th June 2021</b>	<b>Summer Student: Escape Summer School, LAPP</b> [ <a href="#">certificate</a> ] <ul style="list-style-type: none"><li>The aim of the school was to provide theoretical and hands-on training on Data Science and Python development for Astronomers. [<a href="https://github.com/escape2020/school2021">github.com/escape2020/school2021</a>]</li></ul>
<b>January 2021</b>	<b>The 2020 University Physics Competition</b> [ <a href="#">report</a> ; <a href="#">certificate</a> ] <ul style="list-style-type: none"><li>Earned bronze medal</li><li>For computing trajectory and fuel required for Ion Thruster powered Space-craft from Earth to Saturn; utilized open-sourced repo PoliAstro for orbital calculations and a python script for fuel calculations.</li></ul>
<b>June - Sept 2020</b>	<b>SWANtenna20 - Antenna Design Challenge: Online</b> [ <a href="#">certificate</a> ] <ul style="list-style-type: none"><li>Participated in SWANtenna20 conducted by TLC IUCAA, Pune.</li><li>It involved simulating a novel design of dual orthogonal linear polarization antenna with effective radiative coupling over 50 MHz to 500 MHz.</li><li>As a follow-up to this project, I was able to simulate a novel vertically stacked kite shaped antenna [<a href="#">preprint</a>]</li></ul>

<b>November 2020</b>	<b>Vela Pulsar: Dispersion measure and time period</b> This project involved writing a python based analysis pipeline for computing the dispersion measure and the time period of the Vela Pulsar(PSR J0835-4510) using the data collected by the Ooty radio telescope. [ <a href="#">Vela Analysis</a> ]
<b>February 2020</b>	Poster: " <b>Indian Sky Watch Array Network : A Strategic Initiative</b> " <ul style="list-style-type: none"> <li>Mind Bend 2020, SVNIT, Surat, India.</li> </ul>
<b>January 2020</b>	<b>Hands-On Programme</b> <ul style="list-style-type: none"> <li>Sky Watch Array Network, Raman Research Institute, India</li> <li>Hands-on experience with Murchison Widefield Array(MWA) at Gauribidanur Field Station(GBD), RRI, India.</li> </ul>
<b>March - May 2019</b>	<b>SWAN Imaging Challenge: Online</b> <ul style="list-style-type: none"> <li>Participated in the imaging challenge which involved making a 100 <i>sq deg</i> radio image of CAS-A from the data collected during late 2017 by the Sky Watch Array Network, RRI, India.</li> </ul>
<b>May - June 2019</b>	<b>Visiting Student</b> <ul style="list-style-type: none"> <li>Digital Signal Processing Lab, Raman Research Institute, Bangalore, India</li> <li><b>Advisor:</b> Prof. Avinash Deshpande</li> </ul>

## PUBLICATIONS

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### Preprints

- [1] [D. Shukla](#), A. M. A, and K. Pathak, "Orbital motion of a test particle around a Schwarzschild's Black Hole in STVG gravity." arXiv, 2022. doi: 10.48550/ARXIV.2211.02008 [<https://arxiv.org/abs/2211.02008>].
- [2] [D. Shukla](#), Y. Modi, and K. Pathak, "DESIGN OF A NOVEL VERTICALLY-STACKED KITE-SHAPED ANTENNA". TechRxiv, 19-May-2022, doi: 10.36227/techrxiv.19785499.v1. [[10.36227/techrxiv.19785499.v1](https://arxiv.org/abs/2211.02008)]

## COMPUTATIONAL SKILLS

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<b>Languages:</b>	Python, C/C++, Fortran 95, Vue.js
<b>Platforms:</b>	Linux, Windows
<b>Version control:</b>	Git
<b>Software &amp; Tools:</b>	L <sup>A</sup> T <sub>E</sub> X, Mathematica, GNU Octave, WxMaxima, WIPL-D Pro, Altair-FEKO

## RELEVANT COURSES

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|------------------------|---------------------------------|--------------------------------|
| • Cosmology [HIS 2021] | • General Relativity [HIS 2021] | • Tensor Calculus              |
| • Special Relativity   | • Quantum Mechanics             | • Nuclear and Particle Physics |
| • Electrodynamics      | • Electromagnetics              | • Classical Mechanics          |

## PERSONAL PROFILE

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<b>Date of Birth:</b>	9 <sup>th</sup> February, 2001
<b>Address:</b>	<b>Devansh Shukla,</b> H.No. 269, Triveni Complex, Lajpatpura Ward, Sagar, Madhya Pradesh, India(470 002).
<b>Languages:</b>	English: <a href="#">IELTS Academic – 8.0</a> , <a href="#">Duolingo – C1</a> Deutsch: <a href="#">A1.1</a> Hindi

## REFERENCE(S)

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<b>Prof. Kamlesh Pathak</b>	<b>Professor,</b> Department of Physics, Sardar Vallabhbhai National Institute of Technology, Surat, India Email: <a href="mailto:knp@phy.svnit.ac.in">knp@phy.svnit.ac.in</a>
<b>Dr. Dimple V. Shah</b>	<b>Associate Professor,</b> Department of Physics, Sardar Vallabhbhai National Institute of Technology, Surat, India Email: <a href="mailto:dshah@phy.svnit.ac.in">dshah@phy.svnit.ac.in</a>