Devansh Shukla

Integrated Masters of Science in Physics
Department of Physics
Sardar Vallabhbhai National Institute of Technology
Surat, India (395 007)
www.svnit.ac.in

Email: i18ph021@phy.svnit.ac.in
devanshshukla99@gmail.com
Phone: +91 9826887954
Citizenship: Indian
0000-0003-0610-9747
Google Scholar
devanshshukla99

RESEARCH INTEREST

General relativity and Cosmology; particularly, using the modified theories of gravity for solving current problems.

EDUCATION

2018 - 2023	**Integrated Masters of Science in Physics** Department of Physics, Sardar Vallabhbhai National Institute of Technology Surat, India (svnit.ac.in)	9.64/10 VIII sem
2016 - 2018	**Senior Secondary Education** Kendriya Vidyalaya No.1 Sagar Madhya Pradesh, India	93.0%
2014 - 2016	**Higher Secondary Education** Kendriya Vidyalaya No.1 Sagar Madhya Pradesh, India	10/10

FELLOWSHIPS / RESEARCH EXPERIENCE

2022

Orbital motion of a test particle in STVG gravity around a static spherically symmetric solution
Advisor: Prof. Dr. 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.
[https://arxiv.org/abs/2211.02008]

5-30th July 2021

Summer Student: Hamburg International Summer School Particles, Strings & Cosmology
Department of Physics, Universität Hamburg and DESY [certificate]
Lessons on general relativity, QFT, modern topics in cosmology,
particles, string theory with some basic German culture and language courses.

12-23 July 2021

International Summer School on The interstellar Medium on Galaxies from the Epoch of Reionization to the Milky Way [ISM; certificate]
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

7-18th June 2021

Summer Student: Escape Summer School, LAPP [certificate]
- The aim of the school was to provide theoretical and hands-on training on Data Science and Python development for Astronomers. [github.com/escape2020/school2021]

January 2021

The 2020 University Physics Competition [report; certificate]
- Earned bronze medal
- 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.

June - Sept 2020

SWANtenna20 - Antenna Design Challenge: Online [certificate]
- Participated in SWANtenna20 conducted by TLC IUCAA, Pune.
- It involved simulating a novel design of dual orthogonal linear polarization antenna with effective radiative coupling over 50 MHz to 500 MHz.
- As a follow-up to this project, I was able to simulate a novel vertically stacked kite shaped antenna [preprint]

November 2020	**Vela Pulsar: Dispersion measure and time period** 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. [Vela Analysis]
February 2020	Poster: "**Indian Sky Watch Array Network : A Strategic Initiative**" • Mind Bend 2020, SVNIT, Surat, India.
January 2020	**Hands-On Programme** • Sky Watch Array Network, Raman Research Institute, India • Hands-on experience with Murchison Widefield Array(MWA) at Gauribidanur Field Station(GBD), RRI, India.
March - May 2019	**SWAN Imaging Challenge: Online** • Participated in the imaging challenge which involved making a 100 *sq deg* radio image of CAS-A from the data collected during late 2017 by the Sky Watch Array Network, RRI, India.
May - June 2019	**Visiting Student** • Digital Signal Processing Lab, Raman Research Institute, Banglore, India • Advisor: Prof. Avinash Deshpande

PUBLICATIONS

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]

COMPUTATIONAL SKILLS

Languages:	Python, C/C++, Fortran 95, Vue.js
Platforms:	Linux, Windows
Software & Tools:	LaTeX, WxMaxima, Mathematica, GNU Octave, WIPL-D Pro, Altair-FEKO
Python Packages:	AstroPy, PoliAstro, Pandas, NumPy, SciPy, Matplotlib, SymPy, ...

RELEVENT COURSES

- Cosmology [HISS 2021]
- General Relativity [HISS 2021]
- Tensor Calculus
- Special Relativity
- Quantum Mechanics
- Advanced Quantum Mechanics
- Electrodynamics
- Electromagnetics
- Classical Mechanics

PERSONAL PROFILE

Date of Birth:	9^{th} February, 2001
Address:	**Devansh Shukla**, H.No. 269, Triveni Complex, Parkota, Sagar, Madhya Pradesh, India(470 002).
Languages:	English: IELTS Academic – 8.0, Duolingo – C1 Deutsch: A1.1 Hindi

REFERENCE(S)

Prof. Kamlesh Pathak	**Professor**, Department of Physics, Sardar Vallabhbhai National Institute of Technology, Surat, India Email: knp@phy.svnit.ac.in
Dr. Dimple V. Shah	**Associate Professor**, Department of Physics, Sardar Vallabhbhai National Institute of Technology, Surat, India Email: knp@phy.svnit.ac.in