Devansh Shukla

Integrated Masters of Science in Physics
Department of Physics
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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

May - June 2019 — **Visiting Student**
- Digital Signal Processing Lab, Raman Research Institute, Banglore, India
- Advisor: Prof. Avinash Deshpande
- Detecting H1 line with horn antenna using an SDR.

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.

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.

February 2020 — Poster: "**Indian Sky Watch Array Network : A Strategic Initiative**"
- Mind Bend 2020, SVNIT, Surat, India.

January 2021 — **The 2020 University Physics Competition: Online**
- 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. [report; certificate]

7-18th June 2021 — **Summer Student: Escape Summer School, LAPP** [escape]
- 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]

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

5-30th July 2021 — **Summer Student: Hamburg International Summer School Particles, Strings & Cosmology**
Department of Physics, Universität Hamburg and DESY [HISS]
Lessons on general relativity, QFT, modern topics in cosmology, particles, string theory with some basic German culture and language courses.

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].

- Under review at Physical Review D, APS

SELF-DEVELOPED CODE(S)

- Maintainer for **SAS-RFI**
  - Developed a Python Program for RFI(Radio Frequency Interferance) Scan at Sardar Vallabhbhai National Institute of Technology, Surat, India.
  - The program acquires data using an SDR(Software Defined Radio) and processes it to generate the dynamic spectrum.
  - github.com/devanshshukla99/SAS
- Contributor to **SunPy**
  - SunPy is an open-source Python library for Solar Physics data analysis and visualization. [github.com/sunpy]

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[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