Devansh Shukla

Integrated Masters of Science in Physics
Department of Physics
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RESEARCH INTEREST

General relativity and Cosmology. Particularly, using novel techniques to solve the current cosmological problems.

EDUCATION

2018 - 2023	**Integrated Masters of Science in Physics** Department of Physics, Sardar Vallabhbhai National Institute of Technology Surat, India (svnit.ac.in)	9.68/10 VI 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.

Aug - Sept 2019 — **Radio Frequency Interference Scan using an SDR and SAS-RFI**[1]
- Applied Physics Department, SVNIT, Surat, India.
- Collecting raw voltage data using an SDR from 80 to 300 MHz then processing it to obtain frequencies with significant interference. [10.5281/zenodo.5089824; analysis report]

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.

June - Sept 2020 — **SWANtenna20 - Antenna Design Challenge: Online**
- 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. [certificate]

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] Devansh Shukla; Yaagna Modi; Kamlesh Pathak; (2022): Design of a Novel Vertically-Stacked Kite-Shaped Antenna (10.36227/techrxiv.19785499.v1)

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
- Maintainer for **pytest-remote-response**
  - A pytest plugin for capturing and spoofing connection requests.
  - Useful in increasing certainity with unit-tests which are connected to an online-service.
  - github.com/devanshshukla99/pytest-remote-response
- Maintainer for **pytest-intercept-remote**
  - A pytest plugin for intercepting outgoing connection requests.
  - Useful for getting a list of URLs contacted during a unit-test.
  - github.com/devanshshukla99/pytest-intercept-remote
- 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++, Vue.js
Platforms:	Linux, Windows
Software & Tools:	LaTeX, WxMaxima, Mathematica, GNU Octave, WIPL-D Pro, FEKO EM Solver
Python Packages:	AstroPy, PoliAstro, Pandas, NumPy, SciPy, Matplotlib, SymPy, ...

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