

Akash Vani

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Education

- 2022**(expected) **Master of Science in Physics** | University of Heidelberg, Germany
- 2019** **Bachelor of Science in Physics** | Savitribai Phule Pune University, India
Project: *Photometric Calibration of UVIT* (a UV telescope onboard Astrosat)
- 2016** **Higher Secondary Schooling Certificate** | St. Xaviers Higher Sec. School, Goa - India
- 2014** **Secondary Schooling Certificate** | New Goa G.S. Amonkar Vidhya Mandir, Goa - India

Key Projects

1. Oct 2020 - Oct 2020 | **Quantum Key Distribution: BB84 & E91 Protocol**
We a team of two, demonstrated the working of the BB84 and E91 protocol on the IBMQ quantum computer. We also looked into the transmission of the qubits with and without repeaters to illustrate the working of a quantum network.
2. Sept 2020 - Oct 2020 | **Deep Learning in Astronomy**
Understanding basic deep learning techniques by using TensorFlow. Here a simple neural network is implemented to find whether a galaxy is spiral or elliptical based on photometric data or images obtained from SDSS. The data was provided by Ashish Mahabal during the 7BISS (2020) summer school.
3. Aug 2019 - Oct 2020 | **The study of LMXB 4U 1702-429 using ASTROSAT data**
The spectral and timing study of thermonuclear (Type-I) X-ray burst of 4U 1702-429, a low mass X-ray binary (LMXB), using ASTROSAT's Large Area X-ray Proportional Counter (LAPXC) data.
4. June 2019 - Aug 2019 | **Introduction to Polarimetry**
A literature survey and a presentation on the theme of polarimetry, covering the topics of Jones and Stokes formalism and material interactions with a hands-on laboratory component.
5. Jan 2019 - Mar 2019 | **CPT synthesis of layered BiOI nanodiscs and its photocatalytic applications**
We, a group of two, synthesized Bismuth Oxyiodide (BiOI) nanodiscs using co-precipitative (CPT) method and intern used X-ray diffraction and Scanning electron microscopy to confirm its formation. We also tried to experiment with its photocatalytic properties.

Extra-curricular activities

- Jan 2021 | Participated in Astronomy Winter School: High-Energy Astrophysics by NTHU, Taiwan
- Oct 2020 | Participated in the SHINE Autumn School @ CERN, Switzerland
- Sept 2020 | Selected for 7th Byurakan International Summer School by BAO, Armenia
- Nov 2019 | Selected for a workshop on 'Astrosat's Data Analysis' organized by IUCAA (Pune) at Goa University

Internship

- Aug 2020 - Sep 2020 | Photography and editor intern at **Luminance**, Goa, a photography studio
- Aug 2019 - March 2020 | Technical intern at **Bal Bandhoo**, Goa, a wrist watch manufacturing and repairing firm

Achievements

- **Summer Student**
 - 2019 | 'Quantum Information and Quantum Technology' summer school by IISER Kolkata
 - 2018 | 'Introductory Summer School in Astronomy and Astrophysics' by IUCAA, Pune
- **Science exhibitions and camps**
 - 2016 & 2019 | First and Second place at intra college science exhibition, Nowrosjee Wadia College, Pune
 - 2016 | Selected for National Level, Western India Science Fair, Mumbai, India
 - 2014 & 2015 | First place at intra college science exhibition, St. Xaviers HSS, Goa, India
 - 2014 | INSPIRE camp, Goa by the Dept of Science and Technology, India
- **Short Films**
 - 2017 | Wrote and Directed a short film 'Umangi' on the theme of 'Save the Girl Child'
 - 2015 | Wrote and Directed 'My Discovery of India', which won third place at a state level competition
- **Repairing wrist watches**
 - 2008 | Featured on 'TradePost', an International Watch & Clock Magazine, for my competence in assembling and repairing automatic and quartz wrist watches.

Community service and Volunteering

- **April 2020 | Covid – 19 Relief Support Mission, Mapusa-Goa**
 - Communications team
 - Finding resources and facilitating logistics
- **Dec 2019 | Serendipity Arts Festival, Goa**
 - Hospitality and Management Volunteer
 - Volunteered to help artists to set up their art installations
- **2014-2016 | Youth Red Cross, Mapusa-Goa**
 - Participated in first aid and disease prevention workshops
 - Organized blood donation drives and workshops with the help of Red Cross Society of India
- **2011-2013 | National Cadet Corps (NCC), Directorate of Goa & Karnataka**
 - Leading NCC cadet
 - Selected for National Integration camp (2012) and Annual Training camp (2013)

Competencies

Languages

- English, German, Chinese/Mandarin (basic), Hindi, Marathi, Konkani

Programing

- Python, C, C++, R

Basic utilities

- Photoshop, MS Word, MS Excel, MS PowerPoint, Latex

Operating System

- Windows, Ubuntu