Akshay Eranhalodi

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Research Interests

Pulsars, Fast transients, SETI

Education

Master's degree in Physics Aug. 2019 - June 2021
Central University of Karnataka, Karnataka, India
CGPA: 8.17/10.0

Bachelor's degree in Physics Aug. 2016 - May 2019
Government Arts and Science College Meenchanda, Calicut, Kerala
Score: 80.90%

High Scool, Computer Science Aug. 2014 - May 2016
Kendriya Vidyalaya No.1, Calicut, Kerala
Score: 92.60%

Skills

- Programming languages: Python, C++
- Operating systems: Linux, Windows
- Pulsar data analysis: PSRCHIVE, SIGPROC, DSPSR
- SETI tools: blimpy, rawspec, setigen, turboSETI

Conferences

73^{rd} International Astronautical Congress September 2022
Talk title: "SETI India: A Search for techno-signatures with uGMRT"

Astronomical Society of India March 2022
Poster title:"Enabling India's first search for advanced extraterrestrial life."

21^{st} National Space Science Symposium Jan 2022
Talk title:"Using uGMRT to search for advanced extraterrestrial life"

Workshops

ALMA Data Analysis Workshop October 2022
Workshop:"Continuum imaging, spectral line imaging, self-calibration, ALMA and NRAO archive ."

Astronomical Society of India March 2022
Workshop:"HPC workshop on radio astronomy data analysis in the SKA era ."

Research Experiences

Junior Research Fellow November 2021 - October 2022
Amity-UC Berkeley SETI Research Node
Mentored by Dr. Vishal Gajjar

- Developing a dedicated pipeline and SETI backend for upgraded Giant Metrewave Radio Telescope(uGMRT).
- Developed a python library for generating and injecting artificial broadband signals into radio frequency data at raw voltage level and intensity domain.

Master Thesis Jan 2021 - June 2021
National Centre for Radio Astrophysics, Tata Institute of Fundamental Research(NCRA-TIFR)
Mentored by Prof. Bhal Chandra Joshi

- Data analysis on uGMRT observation of pulsar B1939+2134 to search for giant pulses(GP).
- SPANDAK-uGMRT a GPU based pipeline developed for uGMRT, that uses Heimdall as the main kernel is used.
- Studied the energy distribution and emission rates of identified GPs.

Summer Intern May 2020 - June 2020
Indian Institute of Technology, Bombay
Star Hopping : A toolkit for amateur astronomers.

- Created an interface for amateur astronomers to identify Messier objects in night sky by following known stars and hopping to the target.
- Created a database, stereographic projection of night sky showing relevant hops to target.

Citizen Science Project June 2020 - Aug 2020
International Astronomical Search Collaboration

- Participated in two phases of All India Asteroid Search Campaign(AIASC) conducted by SPACE India and IASC.

Bachelor's Degree Project Nov 2018 - March 2019
Regional Science Centre and Planetarium, Calicut
Construction of a photometer

- Using TSL 2561 as luminosity sensor,Arduino Uno as microcontroller, a SD card module, LCD display and their proper interfacing a photometer was constructed.
- Used to compare sky glow values and record lux values of moon over a month.

Awards and Honors

Bronze Honour, International Astronomy and Astrophysics Competition 2020
Best amateur astronomer, Regional Science Centre and Planetarium, Calicut 2019

Outreach

Public outreach and education committee of the Astronomical Society of India, IIT Rorkee March 2022

- Presentation on SETI efforts from India.

Volunteer, Regional Science Centre and Planetarium, Calicut Dec 2019

- Organising annular solar eclipse observations for public.

Volunteer, Regional Science Centre and Planetarium, Calicut May 2018 - March 2019

- Organising stargazing sessions.
- Setting up telescopes and explaining science of objects to public.