Anoj Khadka (RESUME)

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Education

PhD Physics Currently pursuing my PhD in physics with focus on astronomy research at West Virginia University.

M S Physics *Astronomy Research track*, West Virginia University (May 2024).

M Sc Physics Physics Major at Central Department of Physics, Kirtipur Tribhuvan University, Nepal (2011 - 2013).

B Sc Physics Physics Major at Amrit Science Campus, Tribhuvan University, Kathmandu Nepal (2009)

Research and Summer Schools

Research project I: Currently working on *"computational project to build new class of algorithm for pulsar searching"* as part of PhD research project at West Virginia University under the supervision of **Dr. Emmanuel Fonseca**.

Research project II Worked for a semester on *"Applying Fisher Matrix Analysis technique to constrain cosmological parameters in future cosmological surveys"* as part of Masters research project at Leiden University in Netherlands under the supervision of **Drs. Elena Sellentin**.

Summer research project at Leiden Observatory, Netherlands on "Investigating the accuracy of SED fitting codes in constraining galaxy properties in the era of MUSE and JWST" under the supervision of **Dr. Themiya Nannayakara**. (June-August, 2018)

Summer research project on *"Data reduction and analysis of HI data of galaxy HIZOA JO836-43 to study HI gas content and its kinematics"* under the supervision of **Drs. Betsey Adams** and **Drs. Kelley Hess** at Netherlands Institute for Radio Astronomy (ASTRON), Netherlands. (June-August, 2018)

11th International School on Astronomy and Space Science organized by *"B P Koirala Memorial Planetarium, Observatory and Science Museum Development Board"*, Ministry of Science and Technology, Nepal. (October 1-10, 2012)

Awards and Scholarships

Tuition fee waiver to study M Sc Astronomy Research at Leiden University, Netherlands. (2018-2019)

Fully funded summer research internship including travel grant at Leiden Observatory, Netherlands. (June-August, 2018)

Fully funded summer research internship including travel grant at Netherlands Institute for Radio Astronomy (ASTRON). (June-August, 2016)

Selected as a tutor for a year long worldwide online STEM mentorship program of New York Academy of Sciences for mentoring high school student on science topic, 2018.

Presented Talks

Presentation on astronomy summer project *"Testing the accuracy of SED fitting codes in an era of MUSE and JWST"* at the end of internship at Leiden Observatory, 2018.

Paper presentation on *"Multiwavelength Discovery of Neutrino Particles"* at Galaxy Research group meeting during summer internship at Leiden Observatory, 2018.

Presentation on astronomy summer project *"A remarkable HI massive galaxy"* during weekly lunch talk meetings at Netherlands Institute for Radio Astronomy (ASTRON), 2016.

Invited talk on *"Long period radio transients"* during an annual meeting of Society for Amateur Radio Astronomers(SARA) & Radio Jove 2025 eastern conference at Greenbank Observatory, Greenbank, WV, 2025.

Professional Experiences

Teaching Assistant for physics(PHYS 101,102, 111 lab) lab courses here in West Virginia University, 2022 - until now .

Private tutor of physics and maths for pre-university students, 2016-2017.

High School Math teacher at Anandabhumi Boarding High School, Maitidevi Kathmandu, April 2007- October 2008.

Geographical Information System (GIS) data processor at Geospatial Systems Pvt Ltd, Jawlakhel Lalitpur, March-August 2009.

Volunteered as Co-ordinator for "Environment Conservation Group" during high school study to conduct activities on community health and sanitation inside Butwal Sub-metropolitan City Butwal, Nepal.

Computing Experiences and Skills

Python and pandas - Proficiently using python and pandas for all my research work for past few years. Recently started diving into GPU programming to explore data-intensive search algorithm development and possible application of artificial intelligence in pulsar searching.

MATLAB: Intermediate user and use it frequently for my research work.

Linux/Bash Script: Use it as my OS framework and run my code pipeline via bash script in HPC cluster.

MESA - Did a project using stellar evolution code MESA as part of the course requirement for "Stellar Astrophysics" course.

Github: https://github.com/anojkhadka

Good knowledge on LaTeX text editor.

Research Interests

My research focus mostly on searching this exotic kind of stars called pulsars that has implications on several areas of astrophysics with gravitational wave astronomy being one of them. Personally, exploring how knowledge of math, power of computing and insight of physics can be combined to solve problems outside of physics.

Hobbies

Clubs: Member of West Virginia University Amateur Radio Club. We are group of hobbyists

working together on fun projects like flying baloons to helping events by providing radio support with our ham radios.
Sports/Music: Soccer, Avid trekker and hiker, Science enthusiast (Check my blogs linked on top) Love singing and plays basic guitar. Recently, getting into kayaking.