

Aniket Nath

NISER Bhubaneswar
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Education

2020–2025 **National Institute of Science Education and Research Bhubaneswar**,
Integrated Masters in Physical Sciences(major), Computer Sciences(minor), Affiliated to HBNI,
CGPA - 8.65/10.

Research Experience

Summer 2022 **Analysing X-ray spectra of Dual AGNs**,

Supervisor: Dr. Mousumi Das & Dr. Santanu Mondal, IIA Bengaluru.

- The project aimed at analysing x-ray spectral signatures from dual AGNs.
- As per different models, X-ray spectra are reprocessed from the near event horizon structures.
- Fitting different models can give us an idea about the near event horizon geometry.
- Manuscript for a related publication has been submitted to a journal, and is under review.
- More details can be found [here](#)

Project **ELSA: Exploratory Latent space Search Algorithm**,

Supervisor: Dr. Subhankar Mishra, NISER Bhubaneswar.

- The project aimed at developing an algorithm to explore latent space of representation learning algorithms, and find samples from minority classes.
- It essentially aimed to increase the labelling efficiency for minority classes, i.e., the algorithm learned to sample a specific class in a more efficient way.
- First Co-Author manuscript submitted to International Conference for Learning Representations - ICLR 2024.
- The manuscript can be found [here](#).

Summer 2023 **Correlating properties of Galactic Magnetic Field and Galactic Synchrotron**,

Supervisor: Dr. Pravabati Chingangbam & Dr. Tuhin Ghosh, IIA Bengaluru, NISER Bhubaneswar.

- The aim of this project was to study Galactic Magnetic Field (GMF), using two-point correlation function and higher statistics.
- Synchrotron maps have been simulated using models and different input parameters using the *gpempy* module.
- Statistics were evaluated for these maps, and the properties were being studied using the statistics.
- Tried to match the statistics with the real life data, by exploring the parameter space.
- More details can be found [here](#)

Achievements

2024 **NORDITA Summer Intern, Stockholm University**, *Intern*.

2023 **SERB MATRICS Fellow (Science and Engineering Research Board, Govt. of India)**, *Fellowship*.

2022 **Summer Research Fellow (IASc, INSA, NASI)**, *Fellowship*.

2020 **DISHA (DAE Incentive Scheme for Holistic Science Education and Augmentation) Scholarship, Govt. of India**, *Scholarship*.

Schools and Workshops

Winter 2022 **Radio Astronomy Winter School, IUCAA, NCRA**.

- Jointly hosted by Inter-University Centre for Astronomy and Astrophysics (IUCAA) and National Centre for Radio Astronomy - Tata Institute of Fundamental Research (NCRA-TIFR),
- I explored the basics of Radio Astronomy, learned about it's application in different fields, and performed some hands on experiment.

Winter 2022 **Advanced 21 cm Cosmology Winter School, NISER Bhubaneswar**.

- Hosted by NISER Bhubaneswar as a part of the SKA-India Collaboration.

Computer Skills

Languages Python, C/C++, FORTRAN

Utilities Anaconda, Git, Jupyter Notebook, L^AT_EX

Python Libraries Healpy, NaMaster, Numpy, Astropy, Pandas, Scipy, Matplotlib

Softwares NASA-HEASOFT, XSPEC, Chandra CIAO

Communication Skills

English Full Professional Proficiency

Hindi Native or Bilingual Proficiency

Bengali Native or Bilingual Proficiency

Referees

Prof. Mousumi Das, Professor, Indian Institute of Astrophysics, Bengaluru, India.

Dr. Tuhin Ghosh, Reader-F, National Institute of Science Education and Research Bhubaneswar, Jatni, India.

Prof. Pravabati Chingambam, Indian Institute of Astrophysics, Bengaluru, India.

Dr. Santanu Mondal, Ramanujan Fellow, Indian Institute of Astrophysics, Bengaluru, India.

Extra Curricular

2021 - **Vaktavya (Debating Club), NISER, *Founding Member***.

Current I am a member of the Vaktavya (Debating Club) in NISER. I often participate in various debating competitions, in different formats. I have also participated in a Lok Sabha (Mock Parliament).

2020 - **NISER Astronomy Club, NISER, *Core-Member***, Talks Organizing Committee.

Current I am a core member of NISER Astronomy Club. I am mainly involved in outreach and organizing of talks, in order to popularize and make astronomy and astrophysics more accessible to people of all levels.

2017 **The Bharat Scouts and Guides, India, *Rajya Puraskar Scout***.

I have been a member of the Bharat Scouts and Guides, and I was awarded the Rajya Puraskar in scouting by the Hon'ble Governor of the State of West Bengal.