

BARSHAN RAY

Phone: +91 62949 29302

Email: br20ms109@iiserkol.ac.in

Address: C305, NSCB Hostel, IISER Kolkata, Mohanpur, India

Website: https://fugitivedock282.github.io/CV_Website/



PERSONAL PROFILE

Currently enrolled in the BS/MS program at IISER Kolkata, I aspire to pursue a career in physical sciences.

The broad subject of astrophysics appeals to me, with an admitted bias towards stellar physics, nebulae, and their intersection as star formation and protostellar systems.

I am looking for opportunities to gain more experience in the aforementioned subjects.

Also, computer science (both theoretical and implementational) incites a passion and excitement in me like no other subject.

That itch in my brain can only be satisfied by a constant feed of beautiful algorithms and computational genius to obsess over.

PUBLICATIONS

(2024) Protoplanetary disk size under non-ideal magnetohydrodynamics: A general formalism with inclined magnetic field

[*The Astrophysical Journal Letters*](#)

Yueh-Ning Lee, [Barshan Ray](#), Pierre Marchand, Patrick Hennebelle

EDUCATION

2020–Current

BS–MS Dual Degree

Indian Institute of Science Education and Research Kolkata

EXPERIENCE

June 2022–Current

Center of Excellence in Space Sciences, India (CESSI)

- Helped maintain the CESSI space weather [website](#).
- Tinkered around with [neural networks](#), training them on solar light curves.

June 2023–August 2023

National Taiwan Normal University (NTNU), Taiwan

- Worked as a summer intern under [Dr. Yueh-Ning Lee](#).
- Worked on “[Establishing Stable Protoplanetary Disc Radii Threaded by horizontal magnetic fields](#).”
- [Presented my work](#) at the end of the program.

SKILLS

Quick, intuitive learner

Python

●—————●——○ Great

Neural Networks (PyTorch)

●—————●——○ Good

Julia

●—————●——○ Decent

C

●—————●——○ Great

Java

●—————●——○ Good

C++

●—————●——○ Good

LaTeX

●—————●——○ Great

C#

●—————●——○ Decent

MY HOBBIES

Amateur

Astrophotography

I like engaging in deep-sky astrophotography with my budget Canon EOS 1500D.

Coding

I love a challenge. Although I love fidgeting around with code, a challenge is what gets my blood pumping.

Gaming

I play competitive shooters and a fair share of single-player campaigns.

Ricing

The link describes it all!

CONFERENCES & SCIENCE CAMPS

February 2024

- Speaker at a talk organised by Singularity, The Astronomy Club of IISER-K. Presented to an audience of primarily early undergrads.

June 2023–August 2023

NCTS Theoretical and Computational Astrophysics Summer Student Program

- Organised by and at the National Center for Theoretical Sciences (NCTS), Taiwan.
- Interacted with eminent researchers active in the field of astrophysics in the Asian region.

June 2022–July 2022

SPARC Workshop on Machine Learning in Solar Physics and Space Weather

- Organised by and held in CESSI.
- Attended a week-long workshop detailing machine learning and neural network techniques employed in the solar physics domain.
- Interacted with eminent researchers working in solar physics and space weather, from India and Sweden.

February 2022

SOKENDAI Asian Winter School on astronomy and astrophysics (Online)

- Attended a week-long workshop on ongoing research in the astrophysical domain.

December 2019

Vijyoshi National Science Camp

- Organised by KVPY in IISER Kolkata.

June 2019

JBNSTS Summer Science Workshop Program

- Organised by JBNSTS in 2019, in IISER Kolkata.

FELLOWSHIPS & GRANTS

- **KVPY** (Kishore Vaigyanik Protsahan Yojana) 2018 SA fellow, All India rank 381.
- Jagadis Bose National Science Talent Search (**JBNSTS**) program Junior Scholar (+2 level).