

Anuprovo Debnath

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Education

- 2023 – Present  **BS-MS** Indian Institute of Science Education and Research, Kolkata
Major: Physics
Minor: Mathematics, Computer Science
CGPA: 8.82
- 2023  **I.S.C.** St. Jude's High School
Class 12 - 95.7%
- 2021  **I.C.S.E** St. Jude's High School
Class 10 - 94.4%

Projects

Evaluating Plasma Parameters from a Typical LIBS Plasma

05.2025 – Present

Under the guidance of Dr. Prashant Kumar (Scientist, PRL Ahmedabad), developed a Python-based framework for extracting electron temperature (T_e) and electron density (n_e) from Laser-Induced Breakdown Spectroscopy (LIBS) plasmas using Boltzmann plots, Saha-Boltzmann analysis, and Stark broadening with NIST spectral data. The validated approach demonstrates that calibration-free LIBS can reliably estimate plasma parameters. Currently extending the work by implementing a machine-learning framework with LTE validation, modelling self-absorption, and improving spectral line analysis.

Summer Internship Report: [Link](#)

Hobbyist Compute Cluster Setup (Slashdot Coding Club)

11.2025 – Present

As Secretary of the coding club *Slashdot*, leading the setup of a compute cluster using refurbished PCs sourced from various institute laboratories. Implementing virtualization and orchestration using Proxmox and Kubernetes to provide a sandboxed environment for experimentation without impacting the mission-critical compute cluster of IISER Kolkata.

Simulation of Accretion Disk Around a Black Hole

02.2025 – Present

Project under the supervision of Dr. Sudip K. Garain (Assistant Professor, DPS, IISER Kolkata). Simulating accretion disk dynamics around a black hole in a relativistic framework, following concepts from *Fluid Mechanics* (6th Edition) by Kundu, Cohen, and Dowling.

Reading Project: Thermodynamics and Statistical Mechanics

05.2024 – 07.2024

Reading project under Prof. Arindam Kundagrami (DPS, IISER Kolkata). Studying thermodynamics and statistical mechanics following '*A Treatise on Heat*' by M. N. Saha and B. N. Srivastava.

Skills

- | | |
|--------------------|---|
| Languages |  Strong reading, writing and speaking competencies for English, Bengali and Hindi. |
| Coding |  Java, Python, FORTRAN, C, L ^A T _E X |
| Data Visualisation |  gnuplot, Matplotlib, ORIGIN |
| Web Dev |  HTML, css, JavaScript |
| Misc. |  Blender, L ^A T _E X and Typst typesetting and publishing. |

Experience

- 2025
- **Qiskit Fall Fest, Slashdot Coding Club**
Organized an IBM-sponsored quantum computing event, bringing together students from across the country for hands-on learning using Qiskit. First-of-its-kind event organized by SlashDot.
 - **Blender Workshop on Scientific Visualisation**
Conducted a workshop on using Blender for scientific visualisation and automation using Python scripting.
- 2024
- **IISER Mohali Astronomy & Astrophysics Summer School**
Participated in the summer school, gaining hands-on experience in astronomy and astrophysics research techniques.
 - **SAGAN Workshop, Exoplanet Summer Hybrid Workshop**
Attended the NASA Exoplanet Science Institute-hosted workshop on exoplanet research.
 - **iGEM Team, IISER Kolkata**
Contributed to website development, data visualisation, and animation for the iGEM synthetic biology team.

Awards and Achievements

- 2025
- **Smart India Hackathon (SIH)**
Our team 'Haklu El At' was shortlisted in problem statement: SIH25173.
- 2024
- **International Astronomy and Astrophysics Competition**
Received Silver Honour.
- 2023
- **DST INSPIRE Scholarship**
For being in top 1% in ISC Examination.
 - **National Entrance Screening Test (NEST)**
All India Rank 48.
- 2021
- **JBNSTS (Jagadis Bose National Science Talent Search) Junior Scholarship**
 - **KVPY (Kishore Vaigyanik Protsahan Yojana) Aptitude Test (Stream - SA)**
All India Rank 2104.
- 2016 – 2019
- **Swarnakana Interschool Merit Test organised by the Rotary Club of Madhyamgram**
Ranked in every test from 2016 to 2019.

Projects

- Secretary of *Slashdot*, the coding and designing club of IISER-K, leading initiatives during the successful 2025–26 tenure.
- Active member of *Singularity*, the astronomy club at IISER-K. Served as a video editor and contributed significantly to the podcast Talking to the Stars, featuring interviews with prominent astrophysicists across India.
- Active participant in theatics, specializing in light and sound production. Part of the gold medal-winning drama team at the Inter INCI Cultural Meet (IICM) during 2024 and 2025.
- Assisted Prof. Rajesh Kumble Nayak, DPS, IISER-K in setting up a hobbyist electronics lab at IISER-K.
- Passionate about playing guitar and listening to music.