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SOHINI DUTTA

EDUCATION

Indian Institue of Technology, Indore — *Master of Science in Astronomy*

August 2020 - PRESENT

Course description: Fundamentals of Quantum Mechanics, Electrodynamics, Mathematical Methods, Relativity and Cosmology, Astrophysical Fluids and Plasma, Radio Astronomy, Extragalactic Astronomy, Astrostatistics, Stellar astrophysics and stellar remnants (white dwarves, neutron stars and black holes)

Present Cumulative Grade Point Average: 9.82 (out of 10.0)

University of Delhi, New Delhi — *Bachelor of Science(Honors) in Physics*

2016-2019

Course Description: Classical mechanics, Classical Dynamics, Electrodynamics, Quantum Mechanics, Waves and Optics, Mathematical Physics, Analogue and Digital Electronics, Nanomaterials and Applications, Solid State Physics

Cumulative Grade Point Average: 7.243 (out of 10.0)

Greenway Modern School, New Delhi, India-*School Qualifications*	
Higher Secondary (Year 12)	Secondary (Year 10)
Grades achieved: 92.2%	CGPA: 10.0 out of 10.0

RESEARCH EXPERIENCE

Indian Institute of Technology, Indore, India — *Year-long Research Project*

AUGUST 2021 - PRESENT

Estimating the Epoch of Reionization parameters from CII power spectrum and CIIx21cm cross-power spectrum using an ANN-based emulator and Bayesian Inference.

Project Supervisor: Dr Suman Majumdar

National Center for Radio Astronomy, Pune, India — *Summer Research Project*

MAY 2021 - AUGUST 2021

Searching for nulling in millisecond pulsars using radiofrequency observations from the Giant Metrewave Radio Telescope (GMRT).

Project Supervisor: Dr Bhaswati Bhattacharyya

National Physical Laboratory, New Delhi, India — *Summer Internship*

May 2017 - July 2017

Worked on the analysis of hydroelectric cells and the rate of ion production and pH change as a function of time.

Project Supervisor: Dr Ved Varun Agarwal

Other Mini Projects

- MCMC code to estimate cosmological parameters from supernova Ia data
- Study of redshift dependence of AGN abundance
- ARIMA modelling to predict time series data
- Fermi-LAT instrumentation and observations
- VLBI techniques and applications
- Optical Fibre and its prospects

SKILLS and EXPERIENCE

Skills	Experience
• Programming (Python, C/C++) • Artificial Neural Networking (ANN) • Linux • LaTeX • Microsoft Office	• Simulations (N-body, Fof halo-finder, semi-numerical CII and HI simulations) • Bayesian Inference (MCMC)

CONFERENCES AND WORKSHOPS

- Selected for SKA CD/EoR SWG meeting to be held from Sept 27-29, 2022 in Pisa, Italy
- Selected for Astro Hack Week 2022, to be held from Oct 17-21, 2022, in Heidelberg, Germany

ACADEMIC ACHIEVEMENTS

Joint Admission Test for M.Sc.(JAM)-*Indian Institute of Technology*

YEAR: 2020

National Rank: 344 (out of approximately 13,000 candidates)