Arjun Ghosh

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Education

Program	Institution/Board	%/CGPA	Year
B.Tech. (Electronics and Communications & Engg.)	University of Calcutta *Rajabazaar, West Bengal*	**9.24/10**	2020-24
ISC (Science with Computer Science.)	Don Bosco School *Liluah, West Bengal*	**92.0%**	2018-20
ICSE (Science and Humanities)	Stepping Stone School *Rishra, Hooghly*	**92.6%**	2008-18

Key Research Internships (Headings are linked to GitHub)

1. *MITACS Globalink Research Internship* **May 2023 - July 2023**

(B.Tech / Guide: Dr. Victor Khalack) *University de Moncton, Moncton, Canada*

- Studying Chemically Peculiar stars using the TESS Telescope
- Working under the supervision of Dr. Khalack with the aid of Mitacs Globalink Research Internship 2023

2. *Data Reduction and Data Processing in Astronomy* **Sept 2022 - Present**

(B.Tech / Guide: Dr. Kenda Knowles) *University of Kwazulu-Natal, South Africa*

- Working with Astronomical Data under the supervision of Dr. Knowles
- Working in Radio Interferometry

3. *CU-ST RADAR in Astronomy* **June 2022 - Present**

(B.Tech / Guide: Prof. Dr. Ashik Paul, Mr. P Nandakumar) *University of Calcutta*

- Facility: CU-ST RADAR (Link), Haringhata Campus, Institute of Radio Physics and Electronics
- Running calibration experiments of the CU-ST Radar, which is a **Array Antenna** of 475 Yagi-Uda elements
- Worked on the Noise, Gain, Peak Power Profiles of the antenna for Astronomical Observations
- Worked and operated the RADAR for wind profiling of the atmosphere in height range of 1.5 Km to 23 Km. Also performed Moon Echo Experiment.

4. *RADAR in Astronomy* **June 2022 - Present**

(B.Tech / Guide: Dr. Abhirup Datta) *Indian Institute of Technology, Indore*

- Working with RADAR Antenna (currently CU-ST Radar) to probe astronomical sources

5. *Data Visualization for Auto ML Model* **June 2022 - December 2022**

(B.Tech / Guide: Dr. Anil Kumar Gupta) *Centre for Development of Advanced Computing, Pune*

- Data Visualization for AUTO-ML Models (input processed data and output result data)

Projects (Headings are linked to GitHub)

1. *COVID Detection from Lung Cough Noise using Machine Learning* **May 2022 - September 2022**

(B.Tech / Team Project) *University of Calcutta*

- We have successfully made a working model to diagnose COVID-19, Currently increasing the efficiency above 90%.

2. *Antenna Design using HFSS* **April 2022**

(B.Tech / Faculty: Prof. Santanu Mondal) *University of Calcutta*

- Designed a Microstrip Dipole Patch Antenna at 2.4 GHz using CST Microwave Studio

3. *Train Velocity Device with no visuals neccesary* **April, 2022**
(B.Tech) *University of Calcutta*

- A portable handheld device which finds the speed of train without any visuals required, but only the sound of it using Arduino and sound sensor.

4. *Line Follower Robot* **May, 2022**
(B.Tech) *University of Calcutta*

- - A Robot car that drives with the help of Infrared Sensor guided by Infrared absorbing tracks.

Research Papers and Review Papers

- Lung Cough Noise based COVID-19 Detection using Machine Learning - Research paper - will be published soon

Conferences and Conclave Attended

- IEEE Global Microwave and Antenna Conclave, Kolkata - Jan 2023: Attended the Conclave offline as a student member of IEEE.
- IEEE Microwave Antenna and Propagation Conference, Bangalore - Dec 2022: Was one among the fifty students nationally for the BTech-MTech Student Connect Program, which waives off Conference and Pre-Conference Fees, arranges for stay and also partially supports travel expenses

Training

1. *High Performance Computing Bootcamp* **May 2022**
(B.Tech / Mentor: NVIDIA, CDAC) *NVIDIA*

- Worked in HPC with Nvidia in a bootcamp working on RDF (Radial Distribution Function).
- Consecutive GPU Coding with Code Acceleration. Deployed models on PARAM SIDHDHI AI Supercomputer

Relevant Course Work

1. Key Courses **February 2020 - July 2022**
(Core and electives) *University of Calcutta*

- Course: Physics, Mathematics, Basic Electrical Engineering, Basic Electronics, Electromagnetic Fields and Waves, Circuit and Network Theory ,Signals and Systems, Antenna and Radio Wave Propagation, Material and Physical Electronics, Algorithms and Advances Data Structures (Theory), Analog Circuits, Electronic Devices, Control Theory and Systems, Communication Principles and Techniques, Digital System Design, Computer architecture and Organization, Digital Communication, Satellite Communication, Probability and Stochastic Process, Basics of Astronomy.
- Lab: Antenna Designing (CST Microwave Studio), Algorithms and Advanced Data Structures (Lab), Advanced Programming Laboratory Lab in Python

Technical Skills

- Programming Language and OS: C, Java, Python, LINUX MATLAB, HTML
- HFSS: Ansys, CST Microwave Studio
- Operating System: Windows, Linux
- Tools: Latex, Anaconda, Microsoft Office, Excel, Word

Positions of Responsibility

- *Vice Chair*, IEEE Antenna and Propagation Society Calcutta University Student Branch (2022-23).
- *President and Founder*, Astronova, Astronomy Club at University of Calcutta (2022-23).
- *Treasurer* IEEE Microwave Theory and Techniques Society Calcutta University Student Branch (2022 - 2023).
- *Treasurer* IEEE Photonics Society Kolkata Chapter (Sept 2022 - Sept 2023).
- *Website Manager and Awareness Committee Lead* IEEE Calcutta University Student Branch (Sept 2022 - Sept 2023).
- *Community Manager* for Unsynchronised, a community for Researchers and Scientists (Jun 2022 - Present).

- *Secretary* at SPIE Student Chapter, Department of Applied Optics and Photonics, University of Calcutta. (2021-22).

Achievements/Awards

- Joint Winner in *Optical Model Demonstration* conducted by SPIE, OPTICA, OSI Students' Chapter, University of Calcutta. My model was Light guided Robot Car (Aug, 2022).
- Secured 2nd rank in *Lecture Competition* conducted by IEEE Photonics Society Kolkata Chapter, IEEE Calcutta University Student Branch, Photonic Society CUSB Chapter. My topic was on Semiconductor Lasers (May, 2022).