Aravind Bharathi
Engineering Physics with Honours

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Education

Present	**B. Tech.,** *Department of Physics, Indian Institute of Technology Bombay, Mumbai, India; Minor in Computer Science*

Research Interests

- General Relativity
- Cosmology
- Image Processing
- Astrophysics
- Computational Physics
- Satellite Technology

Publications and Awards

2021	Recipient of the IIT Bombay Undergraduate Research Award 01
2020	Katla V., Valluvan A. B. et al. "An Approach to Star Tracker Design for Nano-Satellite Applications" extended abstract presented in National Conference on Small Satellite Technology and Applications, Trivandrum, India, 2020

Research Experience

Present	**Astrometric Microlensing with GAIA**
Supervisor	*Professor Vikram Rentala, Department of Physics, IIT Bombay*
	Investigating candidates for dark matter through gravitational lensing observations
Autumn 2021	**Black Hole Thermodynamics**
Supervisor	*Professor Urjit Yajnik, Department of Physics, IIT Bombay*
	A project taken as part of a seminar course on Black Hole Physics and Cosmology
2020 – 2021	**Canopy Height Estimation using drone-based RGB Images**
Supervisor	*Professor J. Adinarayana, Institute Chair Professor, IIT Bombay*
	Applying computer-aided approaches to support high-performance and sustainable agricultural systems in semi-arid tropics of India

Notable Projects

Present	**IIT Bombay Student Satellite Program** | Electrical Subsystem
	Building a CubeSat-compatible Star Tracker-based Attitude Determination System for celestial navigation to be tested onboard the PS4-OP
Summer 2021	**Computational Geometry and Algorithms**
Supervisor	*Professor A. Agrawal, Department of Computer Science and Engineering, IIT Madras*
Spring 2021	**Quantum Imaging using Complex Degree of Coherence**
Supervisor	*Professor Anshuman Kumar, Department of Physics, IIT Bombay*

Institute Positions

Present **Subsystem Head** | Electrical
Student Satellite Program, IIT Bombay

Present **Department Academic Mentor**
Student Mentorship Program, IIT Bombay

Summer 2021 **Panel Member** | Institute Technical Summer Project
Institute Technical Council, IIT Bombay

2020 – 2021 **Institute Technical Convener**
Maths and Physics Club, IIT Bombay

Technical Skills

Programming C++, Python, Matlab, C, VHDL, ROOT
CAD & Sim. Blender, EAGLE, SPICE, Quartus Prime
Dev. Tools Git, Docker, OpenCV, Pillow, GDAL

Courses Taken

List of courses taken can be found here

Miscellaneous

○ Active public speaker and science communicator
○ Long-distance cyclist and recreational triathlete
○ Highest typing speed: 112 *words-per-minute*. Average: 99 *words-per-minute*
○ Certified with the highest possible Grade 8 in music performance for piano

Complete CV available on request