

Aravind Bharathi

Engineering Physics with Honours

Mumbai, India

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🔗 [aravindbharathi](#)



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 **Electrical Subsystem Head**, *Student Satellite Program*

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

Summer 2021 **Panel Member**, *Institute Technical Summer Project, Institute Technical Council*

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

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: 100 *words-per-minute*
- Certified with the highest possible Grade 8 in music performance for piano

Complete CV available [on request](#)