

Statement of Purpose

My name is Arash Dev Ahlawat, a third-year student in the Department of Physics, pursuing a B.Tech in Engineering Physics with a minor in Data Science and Artificial Intelligence in the CMInDS – Centre of Machine Intelligence and Data Science Department.

I have been interested in astrophysics for a long time, which was a major reason for me choosing Engineering Physics as my major. This interest led me to be part of Krittika – The Astronomy Club of IIT Bombay, where I was a convenor for the 2024–25 tenure. I have also been part of Krittika Summer Project 5.0, where I did binary system evolution simulations using COMPAS – Compact Object Mergers: Population Astrophysics and Statistics under Reinheld Wilcox and Kunal Deshmukh. I am also taking PH 556: Astrophysics this semester.

I have followed the research being done by STAR Lab since my freshman year—the work being done with Daksha, SITARE 1, and the GROWTH-India Telescope (GIT)—and found them very interesting. I would love to be part of these projects and get to learn about and contribute to space science and astronomy while getting the opportunity to work with great seniors, some of whom I know really well from my time at Krittika.

Having talked to some seniors, including Dileep and Arjun, I am excited at the prospects of working on the instrumentation side of things. I really enjoyed the Analog and Digital Lab taken by Professor Sarin last semester and have found myself working best when I am into “making something.” Therefore, working and learning about instrumentation seems like the perfect balance between my love for astronomy and making things. I realized that FPGA coding would be a requirement for some parts, so I was planning on taking VLSI Design or an equivalent course to learn this semester. I would be open and excited to work on the observational part with GIT as well.