

A K VAIBHAVA

Physics Major at IISER Thiruvananthapuram

vaibhava23@iisertvm.ac.in | 8123 0130 91 | LinkedIn:Vaibhava Addagal

Summary

Undergraduate physics student with a focused interest in astrophysics, particularly the evolution and life cycles of stars. Experienced in theoretical work and data analysis, and motivated by a deep curiosity about the physical mechanisms governing stellar and galactic systems. Dedicated to developing strong research skills and contributing to the astrophysics community.

Education

IISER Thiruvananthapuram , BSMS Dual Degree in Applied Physics	Aug 2023– July 2028
• Coursework: Thermal and Statistical Physics, Numeric Computing , Scientific Computing , Experiments in Optics, Electricity and Magnetism , Numeric Computing , Logic and Discrete Mathematics , Machine Learning , Data Analysis and Visualization , Quantum Mechanics , Electronics , Advanced Physics Lab	

Experience

Hostel Secretary , Students Affairs Council - IISER Thiruvananthapuram	Aug 2024 – Jul 2025
• Hostel Administration & Community Engagement: Coordinated hostel affairs and maintenance requests, liaised between residents and admin, and organized feedback initiatives and events to enhance student life.	
CeNSE Summer School , Semiconductor Technology and Microfabrication	June 2024
• Virtual Micro/Nano-Fabrication: Completed online photolithography and CVD/ALD modules with remote lab demos, optimizing exposure doses and deposition rates for sub-micron patterning.	
• Remote Device Metrology: Analyzed I-V/C-V and ellipsometry datasets via cloud-based platforms, correlating thin-film uniformity and interface traps with MOS device performance.	
OnLine Summer School , Remote Sensing and GIS for Environmental Studies	Jul 2021
• Virtual Remote Sensing & Image Analysis: Completed online modules in satellite imagery acquisition, preprocessing, and classification, optimizing NDVI and land-cover mapping algorithms.	
• Cloud-Based GIS Spatial Analysis: Performed spatial data integration and geostatistical modeling via ArcGIS Online/QGIS Cloud, correlating topographic, climatic, and land-use layers for environmental assessment.	
Core Committee Member , Coding Club - IISER Thiruvananthapuram	Jan 2024 – Present
• Conducted coding events, curated learning resources, and mentored juniors in programming.	
• Played a key role in organizing workshops and competitions to promote coding culture.	
Active Member , Parsec Physics Club – IISER Thiruvananthapuram	Aug 2023 – Present
• Participated in physics discussions, quizzes, and outreach events to promote scientific thinking.	
• Helped organize talks and student-led initiatives to build an active physics community.	

Projects

From Stardust to Stars , Astrophysics Coursework – IISER Thiruvananthapuram	Nov 2024
• Authored a comprehensive essay on stellar evolution covering formation in nebulae, main-sequence dynamics, and diverse stellar endpoints including white dwarfs, neutron stars, and black holes.	
• Analyzed the Hertzsprung–Russell diagram and mass-luminosity relationships, incorporating observational evidence from NASA, Hubble, and Event Horizon Telescope to explain stellar nucleosynthesis and cosmic material recycling.	
Web Development for Beginners , Coding Club – IISER Thiruvananthapuram	Nov 2023
• Conducted an introductory web development program that trained 20+ students in HTML, CSS, and JavaScript fundamentals.	

- Participants were later incorporated into the Coding, Creativity, and Innovation Team (CCIT) to contribute to STC web development initiatives.

STC Web Dev, Science & Technology Council – IISER Thiruvananthapuram 2024

- Collaborated in designing and developing the official STC website with backend integration to streamline event updates, council activities, and student outreach.
- Ensured responsive design and robust architecture to support long-term usability within the institute's technical ecosystem.

Static Model Designer, Anvesha Science Fest – IISER Thiruvananthapuram Sep 2023

- Built static models and designed interactive displays to communicate physics concepts for exhibitions and public engagement.

Science Communication Project, Humanities Course – IISER Thiruvananthapuram 2023–2024

- Led a semester-long team project on effective science communication, developing public speaking, leadership, and audience-tailoring skills.

Technologies

Languages: C++, C, SQL, Python, R-Lab