Yash Xavier [Portfolio Website: www.xspace.space]

RF | IoT | Space, Aviation and Aerospace Enthusiast | Amateur Astrophotographer

LinkedIn: https://www.linkedin.com/in/yx3/ | e-mail: yash.xavier@icloud.com | Git: https://github.com/mifaxav
Phone: +91-99400 77535 | Hyderabad, India - 500089

OBJECTIVE:

I'm a hands-on technologist with a deep curiosity for how invisible systems operate, whether it's decoding long-distance aircraft signals, automating smart devices or building and reprogramming embedded systems from the ground up. My interests span across Computer Science, RF communications, AI, aerospace and IoT. I've explored them through self-initiated projects like SDR tracking (ADS-B, HFDL, AIS) and ESP32-based automation and many more. I enjoy bridging hardware and software to solve practical, real-world problems and am eager to deepen my exploration and curiosity through a hands-on STEM education that emphasizes invention, application and impact.

ACADEMIC:

MYP-3 to IBDP-2 (Present): Oakridge International School, Gachibowli, Hyderabad, India - 500008

IB DP2 'Predicted':

Higher Level	Standard Level	*Predicted*: 42/45
7 - Computer Science (HL)	**7** - Environmental Systems & Societies (ESS)	
7 – Physics (HL)	**6** - English L&L	
7 – Mathematics AA (HL)	**5** – French LA	**3** - CAS/EE/TOK

IB DP1 Scores:

Higher Level	Standard Level
7 - Computer Science (HL)	**6** - Environmental Systems & Societies (ESS)
7 – Physics (HL)	**5** - English L&L
6 – Mathematics AA (HL)	**4** – French LA

MYP-5 IB Exam:

MYP-5 Aggregate Score: 49/56

7 - Mathematics in Eng	**7** - Design in Eng	**4** - French LA
6 - Physics in Eng	**6** - Geography in Eng	**6** - History in Eng
7 - Interdisciplinary in Eng	**5** - Biology in Eng	**6** - Chemistry in Eng
7 - Personal Project in Eng	**5** - English L&L	

SKILLS:

- Embedded Systems
- IoT Development
- Critical Thinking
- RF Signal Processing
- Astrophotography
- Creativity and Innovation
- Software-Defined Radio
- Problem Solving & Debugging
- STEM Outreach & Teaching
- Python Programming
- Linux & IT Systems
- Design Development

Research and Internships: (https://xspace.space/research-and-internships)

- **AI integration in ATC (Air Traffic Controller) - Research** **June'2025 (ongoing)**
- **Intern, Experiment Labs** **May'2025 (ongoing)**
  Increase range of drones utilizing amplification hardware: LNAs and PAs and other related technologies.
- **Intern, WhizHack Technologies** **June'2023 - October 2023**
  VAPT projects (SQL Injection, Cross site scripting), CTF Challenges, Tools research (Wireshark, Nmap)

Certificates / Accolades:

- **Outstanding Academic Achievement** Award 2025 – **Computer Science HL, Physics HL**
- **Finalist at IndeHub India WWDC25 Hackathon'25** – Apple Development Centre, Bangalore
- **IIT Jodhpur** - Technology Innovation and Startup Centre: Cyber Defence program
- **Callido**: Distinction in a Technology Integrated course for college readiness skills (Top 25th percentile globally)
- **IntelligencePlus**: InnoVenture 2022 Challenge – Rank 1st at State Level and Rank 4th at National Level
- **Bookosmia and School Article**: Certificate of Excellence for publishing Astrophotography articles (July 2023)
- **ACER IBT** International Reasoning 2022 – IBT International: 99.7% (High Distinction)
- **IASC -** International Astronomical Search Collaboration
- **ARISS SSTV Award** – Amateur Radio on the International Space Station
- **iNNOVENGERS** Workshop 2025 - Certificate of Innovation

EXTRACURRICULAR ACTIVITIES / HOBBIES / INTERESTS:

RF & Software-Defined Radio (https://xspace.space/geek-zone)

ADS-B Flight Tracking: (My Live Dashboard: https://flight.xaviers.me/tar1090)
- Feed 24/7 real-time Aircraft tracking data to FlightRadar24, FlightAware and ADS-B Exchange

AIS - Marine vessels tracking:
- AIS operates in the VHF band at 161.975 MHz (Channel 87B) and 162.025 MHz (Channel 88B)

HFDL – Long Distance Aircraft Tracking:
- Feed 24/7 real-time aircraft tracking data to FlightRadar24, FlightAware, and ADS-B Exchange using a Raspberry Pi.SDR and custom antennas.

Satellite Weather Data Decoding (NOAA & Meteor):
- Capture and decode imagery and telemetry from NOAA15/18/19 and Meteor M2-3/M2-4 satellites using RTL-SDR and custom antennas.

RF Monitoring Projects using RTL-SDR:
- MF: Local AM reception using SDR Blog V4 **|** • HF: HFDL (High Frequency Data Link), USB Voice Reception, Shortwave Radio Stations **|** • VHF: Air Traffic Control (ATC), SSTV Reception from the ISS, NOAA and Meteor POES satellite signals at 137 MHz **|** • UHF: ADS-B aircraft transponder data

FM Radio Transmission:
- Built and tested an FM radio transmitter using a Raspberry Pi with a range of ~1 km (for educational purposes).

Space Science & Astronomy (https://xspace.space/astronomy-and-astrophotography)

Amateur Astrophotographer:
- Captured celestial objects - Moon, Jupiter, Saturn, deep sky galaxies, nebulae and star clusters.
- Created and published original content: Astrophotography articles, a Photo book and a themed calendar.

NASA Citizen Scientist – International Asteroid Search Campaign:
- Analyse and report datasets at the base level for NASA's asteroid tracking initiatives as part of citizen science efforts.

IT, Hardware & Systems Integration (https://xspace.space/geek-zone)

Hackintosh Development:
- Built a fully functional Hackintosh system with touchscreen support on Lenovo X1 Yoga hardware.
- Contributor to GitHub EFI repositories (for educational, learning and experimentation purposes)

Smart Home Automation with Home Assistant: (MQTT, Tasmota)
- Deployed a Home Assistant docker container over the home network. **|** • Installed custom ROM's on old ESP8266 based devices (such as Sonoffs) to achieve total local control **|** • Home Assistant integrated 'local control' smart TV's, A/C, Smart Bulbs, smart extensions and other smart devices.

LEADERSHIP:

Community Services (https://xspace.space/community-connect)

- Social Service at **Beyond Spectrum** (School for Autistic children who are under the spectrum)
  Assisting instructors with student support and helping students by teaching them foundational skills, under the supervision of a teacher, my primary focus being digital literacy.

OIS Astrophiles (https://xspace.space/oisastrophiles)

- Founded **OIS Astrophiles**, an Astronomy club at Oakridge International School, Hyderabad
  Activities: Astronomy talks, Astronomy quiz, International Astronomical Search Collaboration, Astrophotography basics and many more.

Online Amateur Radio Community (https://xspace.space/oarc)

- **Contributor** to this global network. Proud to be **OARC's sole contributor from India**, hosting both my ADS-B and HFDL receiver node from my home station in Hyderabad. My contribution fills a crucial data coverage gap across South Asia, feeding regional aircraft positions and HF telemetry into OARC's live aggregation network.