



Yash Xavier

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

Git: <https://github.com/mifaxav> | LinkedIn: <https://www.linkedin.com/in/yx3/> | e-mail: yash.xavier@icloud.com

Portfolio Website: www.xspace.space

PROFILE SUMMARY:

Multidisciplinary technologist and emerging engineer with a strong foundation in RF communications, artificial intelligence, aerospace systems and connected technologies. Demonstrates hands-on expertise through projects and research spanning across RF, IoT, iOS development, embedded systems (ESP32), software-defined radio (ADS-B, HFDL, AIS) and IT infrastructure. Adept at integrating hardware and software to solve complex real-world problems. Committed to continuous learning, innovation and community engagement through STEM outreach initiatives.

ACADEMIC:

MYP-3 to Current IBDP-2: Oakridge International School, Gachibowli, Hyderabad

IB DP2 Predicted:	Core HL Subjects 7 - Computer Science (HL) 7 - Physics (HL) 7 - Mathematics AA (HL)	SL Subjects 7 - Environmental Systems & Societies (ESS) 6 - English L&L 5 - French LA	Predicted: 42/45
IB DP1 Scores:	Core HL Subjects 7 - Computer Science (HL) 7 - Physics (HL) 6 - Mathematics AA (HL)	SL Subjects 6 - Environmental Systems & Societies (ESS) 5 - English L&L 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 - Chemistry in Eng 6 - History in Eng 7 - Interdisciplinary in Eng 5 - Biology in Eng 7 - Personal Project in Eng 5 - English L&L		

SKILLS:

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)

Certifications / Additional Courses (<https://xspace.space/research-and-internships>)

- **Finalist at WWDC25 Hackathon** – 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)
 - <https://bookosmia.com/astrophotography-my-journey-so-far-blog-by-yash/>
 - <https://bookosmia.com/new-supernova-on-pinwheel-galaxy-essay-by-yash-14/>
- **ACER IBT International Reasoning 2022** – 99.7%
- **IASC** - International Astronomical Search Collaboration
- **ISRO** – AI/ML for Geodata Analysis
- **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>)

2021 - present

ADS-B Flight Tracking: (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 (<https://xspace.space/aismarinetrack>)

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

HFDL – Long Distance Aircraft Tracking (<https://xspace.space/hfdllongdistancetrackng>)

- 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): (<https://xspace.space/weather-data-capture-noaa>)

- 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>)

2019 - present

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)

Home NAS & Streaming Setup:

- Deployed a local home video streaming service over a custom-built NAS for home use and tech exploration.

Smart Home Automation with Home Assistant:

- 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.