

PRATHMESH PATIL

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❖ Summary: -

UAV Systems Engineer with hands-on experience in drone integration, autonomy testing, embedded systems, and field operations. **Captain of Team Vajra with 20+ projects** in electronics & embedded and strong skills in Pixhawk, Betaflight, PID tuning, telemetry, and diagnostics. Achieved **World Rank 3** (FPV Race) at **TechnoXian 9.0**. Skilled in building, testing, and debugging UAVs for real-world environments.

❖ Education: -

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| • Marathwada Mitra Mandal's College of Engineering, Pune | 2022-2026 |
| <i>Bachelor of Engineering in Electronics & Telecommunication (CGPA: 7/10)</i> | |
| • Late P.B.Jog Jr. College | 2020-2022 |
| <i>12th MSBSHE (Percentage: 54.67%)</i> | |
| • Sri Sri Ravishankar Vidya Mandir, Pune | 2010-2020 |
| <i>10th CBSE (Percentage: 85%)</i> | |

❖ Experience: -

- **Captain, RC Drone Club: Team Vajra (MMCOE, Pune): -**
Worked on building, tuning, and testing high-performance UAVs. UAV system integration, autonomous mission development, and real-world drone testing for college competitions and R&D projects.
- **Intern (R&D), Nasan Medical Electronics Pvt. Ltd.: -**
Developed embedded and IoT prototypes, performed hardware debugging, built secure communication modules, and contributed to real-world electronics testing and validation for medical device applications.

❖ Projects: -

- **Autonomous Quadcopter (Delivery Application): -**
 - Built autonomous UAV using **CrossFlight FC** with **GPS M8N** waypoint navigation, intelligent failsafes, and improved stability control.
 - Created a custom telemetry module and optimized payload stability for smoother, more reliable delivery missions.
- **Raspberry Pi: Custom OS Support & Linux Integration: -**
 - Developed a custom Linux-based OS on Raspberry Pi for specialized medical applications.
 - Enabled optimized performance, secure operation, and seamless integration with device-specific healthcare workflows.
- **OEM Sensor Interfacing for Ventilators & Defibrillators: -**
 - Integrated OEM medical sensors (e.g., SpO₂) with Raspberry Pi and STM32 for real-time physiological monitoring.

❖ Achievements: -

- **World Rank 3rd** - FPV Drone Race, TechnoXian 9.0 World Robotics Championship 2025.
- **World Rank 5th** - Drone Rescue, TechnoXian 9.0 World Robotics Championship 2025.

❖ Technical Skills: -

- **Embedded Systems:** C, C++, Python, Embedded C, Embedded Linux
- **Microcontrollers & Boards:** STM32, ESP32, Raspberry Pi, PIC24, Arduino, NodeMCU
- **Firmware Development:** STM32, bootloaders, firmware flashing (UART/SWD), device drivers, real-time data acquisition.
- **Embedded Linux:** Raspberry Pi OS customization, device configuration, shell scripting, system services.
- **Tools & Platforms:** STM32CubeIDE, KiCad, Arduino IDE, Logic Analyzers, Mender, Balena, Docker (for IoT)