Abhay Jani

669-301-8949 | abhayjani21@gmail.com | https://github.com/paipathan |

Profile

Driven engineering student with experience in robotics, software development, and team leadership. Skilled in designing and optimizing autonomous systems, motion control algorithms, and sensor integrations. Strong problem-solver with expertise in troubleshooting hardware and software under pressure. Proficient in Java, Python, and C++, with experience in version control, mentoring, and project management. Passionate about applying technical and leadership skills to real-world engineering challenges.

Work Experience

Programming Captain at FRC 2854 PROTOTYPES - San Jose (June, 2024 - Present)

As Programming Lead for FRC Team 2854, I developed autonomous and teleoperated control systems using Java and WPILib. I designed motion control algorithms, implemented odometry for improved navigation, and integrated computer vision for real-time decision-making. I maintained a modular codebase, mentored new programmers, and ensured seamless hardware-software integration. Additionally, I optimized robot behavior during competitions, managed version control, and collaborated with mechanical and electrical teams to enhance robot performance.

Chief Technology Officer at Little Sparks Robotics - San Jose (December, 2023 - Present)

As CTO at Little Sparks Robotics, I led the development of robotics curricula and hands-on workshops to teach engineering concepts such as control systems and automation. I developed algorithms for pathfinding, odometry, and sensor integration, while managing both hardware and software development. I mentored students, collaborated with educators, and ensured the reliability of robotic systems during demonstrations and competitions, troubleshooting and optimizing as needed.

Senior Patrol Leader at Troop 264, Boy Scouts of America - San Jose (June, 2024 - Present)

As Senior Patrol Leader, I led the troop by organizing meetings, campouts, and service projects. I delegated tasks to patrol leaders, mentored younger scouts, and ensured they advanced through rank requirements. I led planning for high-adventure outings, focusing on logistics and team dynamics. This role helped me develop leadership, problem-solving, and organizational skills that I apply to engineering and technical projects.

Programming Lead at FTC 18715 ARTEMIS - San Jose (October, 2024 - Present)

As Programming Captain for FTC Team 18715 Artemis, I developed autonomous and teleoperated control systems using Java and the FTC SDK. I designed an odometry-based localization system, integrated AprilTag detection, and optimized mecanum drivetrain control. I mentored new programmers, ensured codebase efficiency, and collaborated with mechanical and electrical teams for seamless hardware-software integration. During competitions, I debugged and optimized robot performance.

Education

Evergreen Valley Highschool - San Jose (August, 2023 - Present)

Skills

- Robotics Development – Expertise in designing and programming autonomous systems
- Programming Languages – Proficient in Java, Python, C++, with hands-on experience in FTC and FRC frameworks.
- Version Control & Code Management – Skilled in Git for managing code versions, team collaboration, and maintaining clean, modular codebases.
- Control Systems – Experience with motion control, feedback loops, and integrating sensor data for precise robot behavior.
- Leadership & Mentorship – Proven ability to lead teams, mentor peers, and encourage collaboration, particularly in technical environments.
- Communication – Effective in conveying complex technical concepts to both technical and non-technical audiences.
- Organizational Skills – Able to manage multiple tasks and projects simultaneously, ensuring timely and efficient completion.
- Game Development - Experience in various game development platforms (Unity, Gadot, Raylib)
- Virtual Reality Integration - Utilization of lidar sensors on Meta Quest 2 to provide accurate pose measurements for robotics applications (QuestNav, FRC)