

# AJAYS

## Robotics and Design Engineer

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### OBJECTIVE

Diligent and Motivated Mechatronics Engineering student with a focus on robotics, embedded systems, and automation. Experienced in building autonomous robotic systems and IoT-based applications, with hands-on expertise in CAD design, SolidWorks, and various simulation tools. Currently developing a space grade robotic system for intelligent crack detection and sealing. Quick learner and team collaborator, committed to innovation and continuous learning.

### SKILLS

• SolidWorks	• FATEK PLC	• ANSYS	• Project Management	• Java
• AutoCAD	• ROS	• Robot Studio	• MATLAB	• Python

### PROJECTS

#### IOT BASED SMART SEEDING AND SPRAYING ROBOT

Sep 2024 - Nov 2024

- Developed an IoT-based smart seeding and spraying robot using ESP MCU, sensor integration, application integration and automation for precise motion control and real-time monitoring.
- Achieved a 30% increase in seeding accuracy and a 25% reduction in chemical usage, supporting sustainable farming

#### AUTOMATED FIRE EXTINGUISHER TRIGGER SYSTEM

Jan 2025 - Feb 2025

- Simulated a fire detection and suppression system using virtual sensors and actuators.
- Programmed zone-wise extinguishing logic with servo-based targeting.
- Designed a low-cost automated safety solution for small-scale industries.

#### INTELLIGENT STRUCTURAL CRACK SEALING ROBOT

Jun 2025 - Present

- Designing a robotic system for crack detection and sealing in space structures.
- Aims to reduce manual inspection time by over 60% and improve structural integration by 40%.
- Integrating image-based crack detection and adaptive sealing using MATLAB simulations.

### TECHNICAL EXPERIENCE

#### Quality Control Engineer

##### HARSHA CNC, Coimbatore, Tamil Nadu

Jul 2024 - Jul 2024

- Executed machining operations and collaborated with the Quality Control team to optimize processes and reduce downtime.
- Performed routine maintenance and used CAD/CAM software for programming, improving machining accuracy and efficiency.

#### Mechatronics Engineer

##### Thalir Automations, Coimbatore, Tamil Nadu

May 2025 - Jun 2025

- Worked on real world industrial automation projects such as Input shaft Bearing pressing machine, Performance testing machine and Seal pressing machine.
- Gained hands on experience in PLC communication, Hydro-pneumatics and Electrical panel wiring.
- Developed skills in Assembly engineering, Automation processes, and Team based project execution.

#### Research Intern (Remote)

##### SPAROBIX , Ahmedabad, Gujarat

Mar 2025 - Present

- Conducted research on Autonomous robotic manipulation, Human-robot interaction & teleoperation, and Macro-scale robotic 3D printing for in-space manufacturing.
- Collaborated with engineering teams in weekly meetings to present, review, and prototype robotic solutions using advanced simulation tools.

### EDUCATION

#### Bachelor of Engineering (B.E.) in Mechatronics Engineering

Oct 2022 - May 2026

Sri Krishna College of Engineering and Technology, Coimbatore

CGPA: 7.6

**LANGUAGES KNOWN** • Tamil • English

**INTERESTS** • Drawing • Designing • Digital Scouting