

Saheem Ahmad Khan

Mechanical & Robotics Engineer

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Professional Summary

Mechanical Design and Robotics Engineer with **2+ years of experience** delivering robotic automation solutions, specializing in cobot applications, EOAT/gripper design, SPM mechanisms, machine tending, and vision inspection. Skilled in managing projects from CAD and fabrication through commissioning and production trials.

Education

B.Tech, Mechanical and Automation Engineering

2020 – 2024

Maharaja Agrasen Institute of Technology, New Delhi

Professional Experience

Orangewood Labs Inc. (YCW18)

Mechanical Lead | Feb 2024 – Present

- Led end-to-end mechanical design, DFM, fabrication, and deployment of robotic automation systems for industrial clients.
- Designed and deployed **10+ robotic automation systems** (SPMs, robotic cells, pick-and-place stations) from concept to shop-floor commissioning.
- Applied DFM and GD&T principles across projects, reducing assembly rejection rates and material costs.
- Led and mentored a team of 3 engineers, assigning tasks, reviewing designs, and ensuring on-time delivery of project milestones.

IITD – AIA FSM

Robotics Intern | June 2023 – Sept 2023

- Designed detailed CAD models and URDF configurations for an AMR, ensuring full ROS compatibility and smooth integration with existing robotics infrastructure.
- Fabricated, assembled, and tested the AMR, optimizing structural integrity and validating reliable real-world performance.

Industrial Projects

Eyewear Frame Cleaning SPM

Lenskart Pvt. Ltd. | Mechanical & Fabrication | [Project Media](#)

- Designed a 4-jig cobot-based cleaning SPM for eyewear frames, achieving a 1 min 22 sec cycle time per frame across 230+ SKUs.
- Engineered pneumatically-operated jigs enabling repeatable positioning and multi-SKU handling flexibility.
- Built a custom foam gripper with an integrated internal acetone pipeline for continuous solvent-soaked paint removal.
- Ensured the complete SPM enclosure, panels, and safety doors complied with industrial safety norms.

Tech stack: Solidworks, Fusion360, RoboDK, ANSYS.

Knob Assembly SPM (Cobot-Based)

PG Electroplast Limited | Mechanical & Fabrication | [Project Media](#)

- Designed a turntable-based SPM integrating a cobot, vibratory feeders, and stamping station, achieving 5–7 parts/min with 90% reduction in manual intervention.
- Designed a precision input tray for handling 10mm × 9.8mm sheet-metal parts (0.4mm thickness), including an injector-type stacking mechanism for accurate top-pick positioning.
- Built a custom vacuum gripper using perforated (non-suction-cup) contact surfaces to handle delicate sheet-metal geometry.
- Implemented Fairino FR5 pick & place operations with proximity/limit sensors, pneumatic actuation, and Festo electric linear actuators.

Tech stack: Solidworks, Fusion360, RoboDK, ANSYS.

Plasma Treatment & Gluing Line — Automotive Door Panels

JJ Technoplast Pvt. Ltd. | Mechanical & Integration

- Developed a turnkey dual-robotic-cell system for plasma surface treatment and adhesive application for **TATA Sierra door panels**, achieving a 1 min 45 sec cycle time per part across both operations and boosting production output by 3x
- Engineered a conveyor-based part transfer system with dedicated jigs for precise door panel handling and positioning between the plasma and gluing cells.
- Reduced manual labor requirements by automating the full transfer and processing sequence, minimizing operator intervention across both stations.

Tech stack: Solidworks, Fusion360, RoboDK, ANSYS.

Phone Cosmetic and Function Testing Box

Cashify | Mechanical Design | [Project Media](#)

- Engineered a 2-axis linear gantry system (200 mm/s speed, 100-micron accuracy) for automated phone inspection.
- Built a compact testing enclosure with optimized camera/lighting placement, achieving 98% surface coverage for cosmetic defect scanning.

Tech stack: Solidworks.

Automated Bottle Packing Robotic Cell

ALPLA | Mechanical & Integration | [Project Media](#)

- Developed an end-of-line automated robotic cell integrating conveyor indexing, sensor-based bottle detection, and robotic pick-and-place manipulation for high-throughput bottle packing.
- Engineered a multi-configuration bottle gripper using adaptive jaw/cavity geometry to accommodate varying bottle diameters and heights without tooling changeover.
- Designed box-nesting mechanisms for precise, damage-free bottle placement.
- Optimized cycle sequencing to boost throughput and reduce manual handling.

Tech stack: Solidworks, Fusion360, RoboDK, ANSYS.

Butter Paper Cup Pick & Place – Automation

Surya Food Agro Ltd. - Priyagold / Mechanical & Integration / [Project Media](#)

- Developed a cobot-based pick-and-place system for butter paper cups, reducing manual cycle time from 2 min to 12 sec (90% reduction) and cutting labor requirement from 14 to 2 operators.
- Engineered a multi-cup gripper with an 8×8 array (64-cavity) pickup configuration and rotary indexing mechanism for simultaneous pick-up and precision placement onto the output conveyor tray.
- Designed a magazine-style gravity-fed input tray system with an 8×8 matrix layout, ensuring consistent cup orientation and stack-up for repeatable robotic pickup.
- Integrated the pick-and-place cell with conveyor indexing for synchronized cup placement at the output stage, maintaining consistent takt time across the line.

Tech stack: Solidworks, Fusion360, RoboDK, ANSYS.

Automated Robotic Coffee Brewing System

Orangewood Labs / Mechanical & Integration / [Project Media](#)

- Engineered a 6-axis robotic coffee-making system automating brewing, dispensing, and serving, reducing manual labor by 80% while preserving traditional espresso quality standards.
- Developed a custom end-effector gripper for precise portafilter handling throughout the brewing cycle.
- Designed a 30° tilting cup-holder mechanism to compensate for robot motion during milk pouring, enabling consistent latte art & Optimized a compact multi-machine mounting frame to maximize floor space utilization.

Tech stack: Solidworks, Fusion360, RoboDK.

Technical Skills

Design Software: SolidWorks(5+ years) | Fusion 360(5+ years) | AutoCAD(3+ years) | CATIA | Creo | RoboDK

Manufacturing: GD&T | DFM/DFA | Sheet Metal | CNC Machining | Injection Molding | Pneumatic Systems

Robots: Elite Cobots, Fairino Cobots

Soft Skills: Team Leadership & Mentoring | Client Coordination | Cross-functional Collaboration | End-to-End Project Ownership | Adaptability Across Industries

ACHIEVEMENTS & CERTIFICATIONS

- Finalist in Flipkart Grid 5.0 Robotics Theme.
- STEM India Innovation Challenge winner at STEM Summit and Awards organized by AICRA.
- Second place at Pitch Your Idea Summit 2023 for Portable Milling CNC.