

TAHA ZAFAR

Mechanical Design Engineer

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PROFESSIONAL SUMMARY

Mechanical Design Engineer with hands-on experience in autonomous mobility systems, robotics, and CAD-driven product development. Strong background in chassis and frame design, drivetrain layouts, and manufacturable mechanical systems for agricultural and industrial applications.

SKILLS

CAD & Design: Fusion 360, SolidWorks, GD&T, DFM/DFA

Mechanical Systems: Chassis & frame design, robotics hardware, drivetrain layouts, mechanisms

Analysis & Tools: MATLAB (Kinematics), RoboAnalyser

Prototyping: Functional & domestic 3D printing, tolerance optimization

Documentation: BOM creation, technical drawings, basic patent drafting

EXPERIENCE

Mechanical Design Engineer — Cropper Technologies Pvt. Ltd. (Ongoing)

- Designing mechanical systems and assemblies for autonomous robotic platforms.
- Responsible for chassis design, motor and drivetrain integration, and electronics enclosures.
- Working closely with electronics and manufacturing teams to deliver production-ready designs.

Mechanical Design Intern — Cropper Technologies Pvt. Ltd. (During 4th year of college)

- Supported CAD modeling, detailed drawings, BOM preparation, and prototype development.

PROJECTS

- **Autonomous Mobility Robot for Weed Removal:** Mechanical architecture, chassis design, hub motor integration, electronics enclosure, and sensor mounting for outdoor agricultural use.
- **Autonomous Mobility Robot for Industrial Load Carrying (300–500 kg):** 4WD skid-steer AMR using hub wheel drives, focused on chassis strength, load distribution, and maneuverability.
- **200cc Power Tiller (Freelance):** Complete mechanical assembly design including frame, engine mounting, and drivetrain layout.
- **6 DOF Robotic Arm – Kinematics:** Forward and inverse kinematics using MATLAB and RoboAnalyser.
- **Domestic & Freelance 3D Printing:** Functional household utilities and custom mechanical components.

EDUCATION

Bachelor of Technology (B.Tech) — Mechanical Engineering

Specialization: Industrial & Production Engineering

Medi-Caps University, Indore