

Kalpak Gajanan Korde *Mechanical Engineering*

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📅 04/11/2002

Profile

Mechanical Engineer. Skilled in CAD and Robotics.

Interested in working towards innovation and sustainability.

Proven ability to lead projects to completion under resource constraints

Education

2022 – 2025	B.tech, Mechanical Engineer
Amravati, India	Government college of engineering, Amravati
	Degree in mechanical engineering

Skills

Fusion	Solidworks
Robotics and Mechatronics	3D Printing and Additive Manufacturing
Product design	project manegment
Self learner	Leadership
Ability to work in team enviornment	Interpersonal skills

Certificates

Robocon 	Fellowship 
Dipex 	I2I 

Patent

AUTOMATED GUIDED AGRICULTURE
VEHICLE FOR FERTILIZATION APPLICATION

Projects

ABU Robocon 2023

designed and manufactured both the robots for ABU Robocon 2023

- Led a multi-disciplinary team to design and fabricate two specialised omnidirectional robots for ABU Robocon 2023, resulting in successful qualification for the initial competitive stage.
- Architected a dual-robot strategy featuring a belt-driven Mecanum wheel system (Rabbit) and an Omniwheel system (Elephant) to optimise speed and precision for respective challenge tasks.
- Personally designed and integrated a complex ring-handling mechanism, enabling robots to reliably acquire and shoot a full stack of 10 rings toward the scoring pole, meeting strict qualification criteria.

AGV for fertilization of crop in field

- Designed and developed a working prototype of an AGV for precise crop fertilization using simple coding techniques and readily available materials.
- Integrated a plant-detection system to identify nearby crops and dispense the appropriate amount of fertilizer.
- Emphasized a minimalist design, leveraging mechanical systems for motion with minimal reliance on electronic components, ensuring cost-effectiveness and simplicity.

- Demonstrated practical automation in agriculture, showcasing innovation and efficiency in resource utilization.

Solar Panel Cleaning Robot: Prototype & CAD Design

Developed the complete CAD design and initial prototype concept for a budget-friendly, automated solar panel cleaning robot.

- Engineered a prototype featuring a four-wheel drive, dual brushes, and Position encoders to ensure complete panel coverage and automated navigation along borders and edges.
- Designed the system for automation, incorporating features like a self-charging solar panel on the unit, a compact and lightweight design, and the capability to use less water to no water for eco-friendly cleaning.
- Included a novel resting station design where the robot can wait between cycles. This station also features a stationary brush to clean the solar panel located on top of the robot itself.