ISHAN DESHMUKH

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About

Deep-seated passion for Robotics, driven by my extensive expertise and skillset. My determination is focused on catalyzing innovation and advancing the frontiers of the robotics industry to shape a transformative future.

Experience

- **Team Robomanipal [🌐]** *AUG 2023 - FEB 2025*
  Electronics Subsystem Member Manipal, India
  - Fabricated, prototyped, and assembled 5+ competition-grade robots, implementing advanced robotics and electronics principles. Programmed microcontrollers and PWM control algorithms, enhancing actuation precision. Integrated 7+ sensors (IMU, proximity, encoders, color, depth, line, limit switches) and 10+ motors/controllers for optimized performance. Competed in DD Robocon 2024, securing AIR 22 nationally. Proficient in KiCAD, SolidWorks, Arduino IDE, and MATLAB, improving circuit design efficiency and mechanical simulations.

Education

- **Manipal Institute of Technology** *2022 - 2026*
  Bachelor of technology, Mechatronics Engineering Karnataka, India
  - GPA: 7.50/10.00
- **Shubhamraje Junior College** *2022*
  Higher Secondary Education Maharashtra, India
  - Grade: 79.3%
- **D.A.V. Public School** *2019*
  Secondary Education Maharashtra, India
  - Grade: 91.3%

Academic Projects

- **3D Printed Robotic Manipulator:** Manufactured a 3 DOF manipulator using NEMA-17 and Servos.
- **Signal Filtering of a Heart Rate Monitoring System:** Implemented a real-time Butterworth filter in MATLAB to process and smooth heart rate signals, reducing noise by 10%.
- **Mathematical Modelling of a DC motor:** Designed and simulated a shunt DC motor model in MATLAB, analyzing speed-torque characteristics and transient response. Applied system modeling techniques to optimize motor control strategies.
- **Smart Water Level Indicator for Plants:** Developed an IIoT-based water level monitoring system, integrating real-time sensor data for optimized irrigation. Utilized embedded systems to enhance plant hydration efficiency and reduce water waste by 40%
- **Simulation for DC-DC Buck-Boost Converter with Closed Loop PI Controller:** Simulation of the Buck-Boost converter on MATLAB.
- **Simulation of Maze Solving Bot:** Simulated the movement of a robot in Gazebo using ROS2.
- **Automated Temperature Regulator:** Simulated a closed-loop temperature regulation system using PLC programming, ensuring precise environmental control.
- **Net Throwing Pneumatic Gun to catch Drones:** Developed and tested a pneumatic net-launching system using Festo FluidSim, achieving 55% effectiveness in capturing UAVs within 50 meters.

Extracurricular Activities

- **Head of Robotics** *OCT 2023 - FEB 2025*
  IE India Mechatronics Student's Chapter, Manipal [🌐]
  - Managed a club of 200 people and conducted several events and robotics related workshops.
  - Inspired and mentored 50+ students across various engineering disciplines, fostering interest in robotics through hands-on workshops and projects. Provided technical guidance on robotic concepts, sensor integration, and control systems, while also assisting in technical report writing and documentation.
- **Core Committee Member for Tech Tatva 2024 (Technical Fest)** *SEP 2024 - OCT 2024*
  IE India Mechatronics Student's Chapter, Manipal [🌐]
  - Organized Mechatron, overseeing event logistics and coordinating a team of 15.
- **Organizing Committee Member for Tech Tatva 2023 (Technical Fest)** *SEP 2023 - OCT 2023*
  IE India Mechatronics Student's Chapter, Manipal [🌐]
  - Designed and built 3 RC cars using L293D motor drivers and ESP32 with Bluetooth for remote control. Focused on optimizing circuit layout and motor control for reliable performance during the event.

Other Details

- **Date of Birth:** 12/04/2004
- **Languages Known:** English, Hindi, and Marathi.