

# Vivek Kamble

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## ABOUT ME

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Robotics engineer with a Master's degree in Robotics. Strong foundation in Mechatronics, control systems, PLC programming, automation, and hands-on experience in robotics projects. Seeking to apply expertise in a forward thinking organization to contribute to developing and implementing advanced robotic systems that enhance efficiency and performance across diverse applications.

## EXPERIENCE

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### Trainee Automation Engineer

*Indo-German Tool Room*

*Indore, India*

*Dec 2022 – Aug 2023*

- Delivered 50+ lectures and hands-on sessions in Robotics, Physics, Sensors and Actuators, PLC & SCADA, Electronics, and Kinematics to around 200 students.
- Led practical sessions and assessments to strengthen technical skills and understanding among 200+ students.
- Produced 20+ instructional materials and facilitated interactive learning experiences across technical domains, enhancing student engagement and comprehension.

### HR Recruiter

*Lancesoft*

*Indore, India*

*Sept 2022 – Nov 2022*

- Spearheaded the recruitment of over 20 Nurse Practitioners and Physician Assistants within a three-month period, ensuring all candidates met stringent healthcare qualifications while addressing urgent staffing needs.

### Automation Intern

*TechMission*

*Indore, India*

*Jan 2022 – April 2022*

- Completed training in Industrial Automation, gaining foundational skills in PLC Programming, Human Machine Interface (HMI), and SCADA systems, with hands-on experience in 3 automation setups.
- Inherited in-depth knowledge of core elements within modern industrial control and monitoring systems through hands-on experience with three distinct automation setups, increasing troubleshooting techniques and system reliability.

## EDUCATION

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### The University of Sheffield

Master of Science in Robotics

Automation Control and System Engineering

*Sheffield, GB*

*2023 - 2024*

### Shri Vaishnav Institute of Technology and Science

Bachelor of Technology in Mechatronics

Department of Electrical and Electronics Engineering

*Indore, India*

*2018 - 2022*

## PROJECTS

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### Agitation System for 2D and 3D Self-Assembly

*University of Sheffield*

*Sheffield, GB*

*Mar 2024 - Feb 2025*

- Formulated and deployed an effective agitator model that targets improved stability during robotic module integration processes; monitored real-time feedback from tests involving 30 independent runs contributing valuable insights into future designs.
- Conducted experiments comparing 2D vs. 3D assembly, optimizing control systems with Arduino for efficient performance.
- Demonstrated that 2D assemblies are faster and stable under varied conditions, with additional results expected

from ongoing research.

### **Autonomous Exploration & SLAM using ROS**

*University of Sheffield*

*Sheffield, GB*

*Feb 2024 - April 2024*

- Developed a TurtleBot system in ROS that used LiDAR for autonomous arena exploration, achieving real-time SLAM and mapping 9+ target blocks (exceeding requirements). Implemented sensor fusion, occupancy grid mapping, and path planning to optimize coverage efficiency.
- Collaborated in a team of 4 to debug navigation logic and validate performance, ensuring robust operation under time constraints.

### **Autonomous Robot for Complex Manipulation and Navigation Tasks**

*University of Sheffield*

*Sheffield, England*

*Oct 2023*

- Collaborated with a team of 4 to design and build an autonomous robot for manipulation and navigation tasks in a controlled arena.
- Led the design and integration of control systems in an autonomous robot, achieving precise navigation to draw tasks within a controlled environment; increased task execution speed by 30% during testing phases.

### **Smart Helmet for Rider Safety**

*SVITS*

*Indore, India*

*Aug 2021 - Dec 2021*

- Built and tested prototypes for a revolutionary smart helmet combining real-time user data on wearing habits alongside breathalyzer technology; achieved 95% accuracy rate in identifying unsafe conditions before rides commenced.
- Integrated an anti-sleep alarm feature and restricted bike ignition activation based on real-time alcohol level readings, contributing to a 30% reduction in accident risks during testing phases.

### **Anti-Sleep Alarm**

*SVITS*

*Indore, India*

*Nov 2019 - Jan 2020*

- Crafted high-accuracy tracking protocols using cutting-edge sensor technology focused specifically on identifying early warning signals of weariness among drivers; enhanced safety awareness as evidenced by zero incidents reported during field tests.

### **Automatic Water Level Indicator and Control System**

*SVITS*

*Indore, India*

*Aug 2019 - Oct 2019*

- Engineered a comprehensive water level monitoring and control system, enhancing detection capabilities within containers; enabled precise management that reduced manual checks by 60 hours annually during university operational tests.
- Developed and launched an automatic pump shutoff system that directly contributed to enhancing workplace safety by decreasing overflow incidents by 80% during critical university operational tests.

## **SKILLS**

### **Technical Skills**

Mechatronics System Design, Programming (C, C++), ROS 2, Control Systems and Automation, PLC Programming, Embedded Systems and Microcontrollers (Arduino), Sensors and Actuators, Robotics and Automation (Kinematics, Dynamics), CAD Design (Fusion 360), Simulation Tools (MATLAB, Simulink), Electrical and Electronics Circuit Design, Soldering, PCB Design.

## **CERTIFICATIONS**

- **Programming with C and C++ – Internshala, Sept 2021**
- **Arduino-based Robotics – Sanmantrana (SVITS), 2019**
- **Boson Section Science Club – SVITS, 2018**
- **Robo Runner – Sushila Devi Bansal College, 2017**