5-Day Faculty Development Program Report

Training on Artificial Intelligence Applications using PictoBlox and Quarky Robotics

Organized Under:

Vidya Pratishthan's Sharadchandra Pawar Center of Excellence in Artificial Intelligence Technology on Wheels Project

Organized By:

Department of Electronics and Telecommunication Engineering

Department of Mechanical Engineering

Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering and Technology, Baramati

Duration: 22nd June to 26th June 2026

Program Coordinators:

Dr. Balasaheb Patil

Coordinator, Department of Electronics and Telecommunication Engineering

Mr. Mandar More

Coordinator, Department of Mechanical Engineering

Resource Persons:

Mr. Vedant

Mr. Jash Desai

SteamPedia

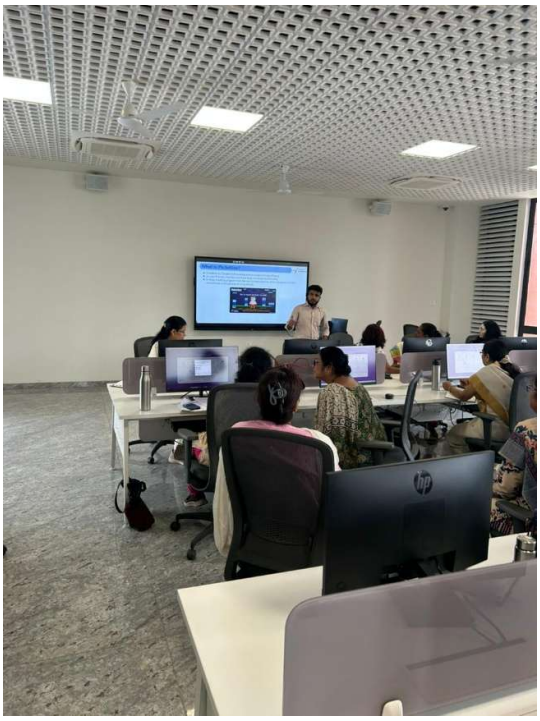
Introduction

A five-day Faculty Development Program (FDP) was organized under Vidya Pratishthan's Sharadchandra Pawar Center of Excellence in Artificial Intelligence as a part of the Technology on Wheels Project. The program was jointly organized by the Department of Electronics and Telecommunication Engineering and Department of Mechanical Engineering, Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering and Technology, Baramati.

The main objective of this FDP was to provide participants with practical knowledge and hands-on experience in Artificial Intelligence, Machine Learning, Robotics, and AI-based applications using PictoBlox and Quarky robotics platforms.

The training sessions were conducted by expert trainers Mr. Vedant and Mr. Jash Desai from SteamPedia, who guided participants through various concepts of AI programming, computer vision, robotics, and automation. The program focused on developing practical skills required for implementing AI-based projects in educational and industrial applications.

Day 1: Introduction to PictoBlox and Creative Programming

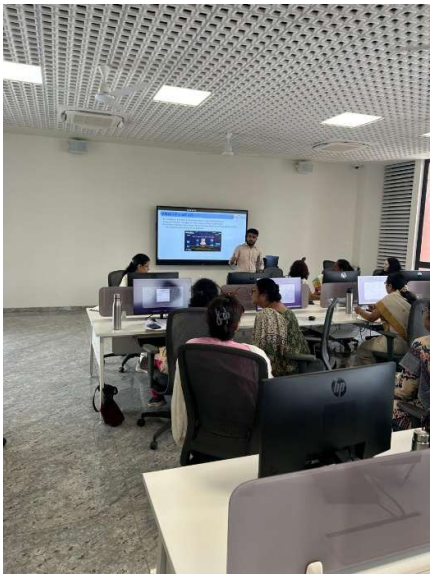
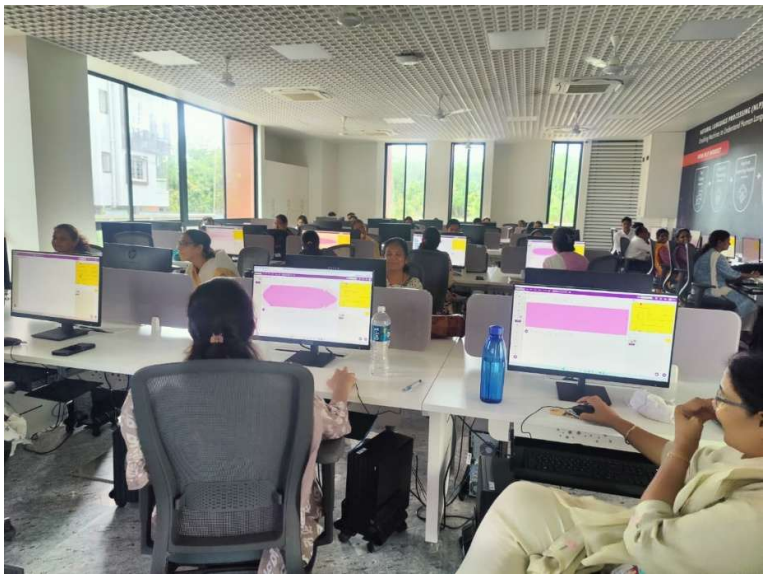


The first day of the FDP started with an introduction to **PictoBlox software**, an interactive programming platform designed for learning coding, Artificial Intelligence, and robotics concepts.

Participants were introduced to the PictoBlox interface, basic instructions, features, and programming environment. The session covered the fundamentals of block-based programming, logical thinking, event handling, and creating interactive applications.

A hands-on activity was conducted where participants developed simple games using PictoBlox. Through this activity, participants understood programming concepts such as animations, controls, and user interaction.

Day 2: Introduction to Artificial Intelligence and AI Model Training

The second day focused on the fundamentals of Artificial Intelligence programming and its practical applications.

Participants were introduced to computer vision concepts and AI-based applications. Practical sessions were conducted on:

- Object Detection using Artificial Intelligence
- Face Detection
- AI Model Creation and Training
- Testing and Implementation of AI Models

The participants learned the complete process of developing AI models, including image data collection, model training, and application of trained models in real-time projects.

Day 3: Introduction to Quarky Controller and Robotics Applications

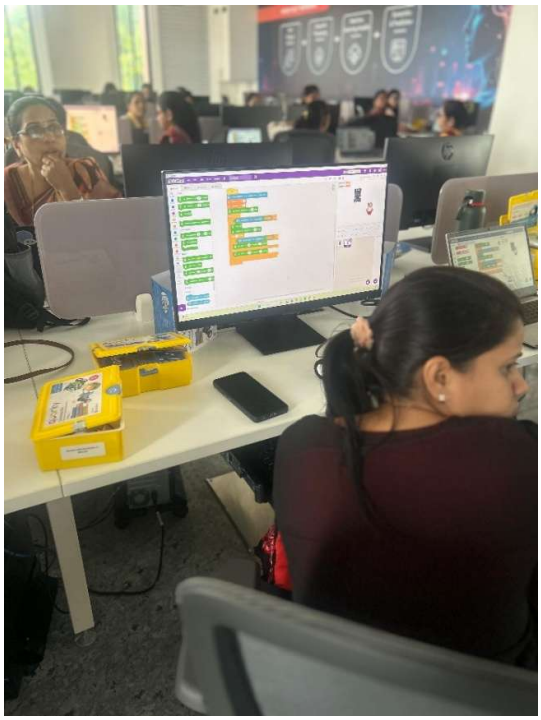
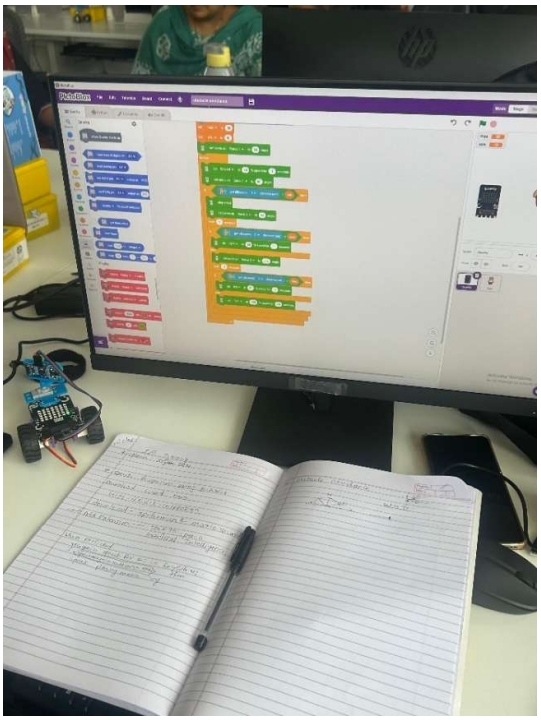
The third day introduced participants to the **Quarky robotic controller** and its applications in robotics. The session covered:

- Introduction to Quarky hardware and programming
- Working of ultrasonic sensors
- Distance measurement applications

- Robot car demonstration
- Development of line-following robot


Participants gained practical knowledge about sensor integration, robot programming, and autonomous movement. The demonstration helped participants understand the role of sensors and controllers in intelligent robotic systems.

Day 4: Robotic Manipulation and Autonomous Systems

The fourth day focused on robotic automation and intelligent robotic applications.

The practical sessions included:

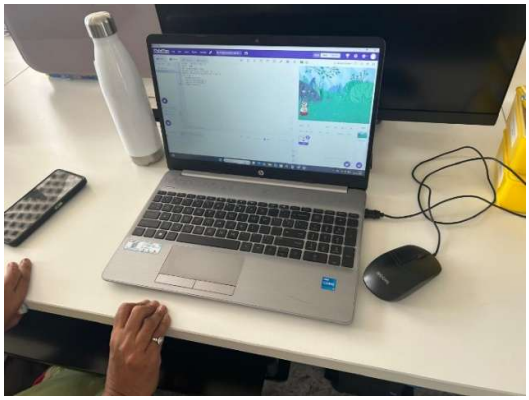
- Introduction to robotic gripper mechanism
- Pick-and-place operation

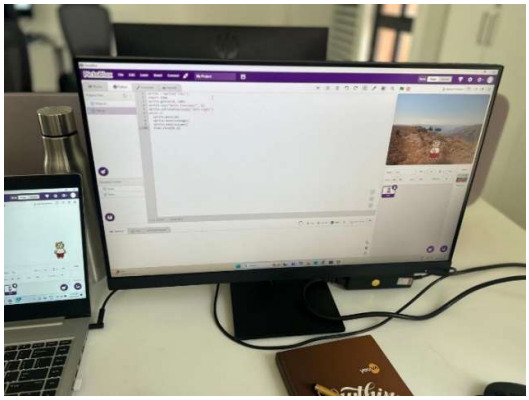
- Robotic automation concepts
- Obstacle detection robot car

Participants learned how robotic systems can be used for automation tasks involving object detection, handling, and autonomous navigation.

The session provided insights into the integration of hardware components, sensors, and programming logic for developing smart robotic solutions.

Day 5: AI-Based Face Expression Recognition Project





The final day of the FDP focused on developing an **AI-based Face Expression Recognition Project using PictoBlox**.

Participants learned:

- Image-based AI model development
- Training AI models for facial expression recognition
- Image processing techniques
- Implementation and testing of AI applications

The hands-on project provided participants with practical exposure to developing computer vision-based AI applications.

Conclusion

The five-day Faculty Development Program successfully provided participants with practical exposure to Artificial Intelligence, Machine Learning, Robotics, and AI-based automation technologies.

The program enabled participants to understand how AI can be implemented with real-world applications using IoT-enabled devices, sensors, and robotic platforms. The hands-on training approach helped participants develop confidence in creating innovative AI and robotics-based projects.

The valuable guidance provided by Mr. Vedant and Mr. Jash Desai from SteamPedia helped participants gain deeper knowledge and practical skills in emerging technologies.

The FDP was successfully coordinated by Dr. Balasaheb Patil, Department of Electronics and Telecommunication Engineering, and Mr. Mandar More, Department of Mechanical Engineering, under the guidance of Vidya Pratishthan's Sharadchandra Pawar Center of Excellence in Artificial Intelligence.

The program concluded with a vision to encourage the adoption of Artificial Intelligence and Robotics technologies in teaching, learning, and research activities.

Mr. M. A. More Co-ordinator Mechanical Department	Dr. B. H. Patil Co-ordinator ENTC Department	Dr. Sudhir Lande Principal VPKBIET, Baramati

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