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Artificial Intelligence with Arduino Portenta H7

Real-time Object Detection with Vision Shield

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1. Trajectory Planning

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Introduction

Project Overview

This presentation focuses on the project titled **Real-time Object Detection with a Vision Shield**, which demonstrates the integration of artificial intelligence (AI) with embedded systems.

Project Objectives

- Develop a system for real-time object detection using Arduino Portenta H7 and Vision Shield.
- Implement AI algorithms on embedded devices for efficient and accurate object detection.

Importance

Real-time object detection has applications in surveillance, industrial automation, robotics, and IoT, among others.

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Components

Description

The project involves the following components:

- **Arduino Portenta H7:** The core microcontroller unit providing processing power and resources for AI algorithms.
- **Vision Shield:** An accessory for the Portenta H7, equipped with a camera module and display for image capture and processing.
- **AI Model:** A pre-trained model deployed on the Portenta H7 for object detection tasks.

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Role

- **Arduino Portenta H7:** Provides computational power and interfaces with the Vision Shield.
- **Vision Shield:** Captures live video frames and displays annotated results.
- **AI Model:** Analyzes video frames for real-time object detection and display detected objects on the Vision Shield's built-in display in real-time.

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Thank you

for your attention