Project Proposal

Cup Detection and Counting System for Cafes and Hotels

Introduction

In cafes and hotels, managers need to track the number of drinks being served to manage costs and avoid waste. Currently, this process is often done manually, which can lead to mistakes and losses. Our project aims to create an AI system that can detect and count cups in real-time, helping managers keep track of how many drinks are going out. This is the first step toward a more advanced system that can also recognize the type of drink in the future.

Problem Statement

Cafes and hotels often lack an accurate way to monitor how many drinks are being made. Without a system to count cups, managers can't easily track inventory, which can lead to wasted materials and lost profits. The goal of our project is to develop a system that can automatically detect and count cups, no matter the size or type, using computer vision.

Goals

1. Cup Detection: Build a system that can recognize whether an object is a cup or not.
2. Cup Counting: Keep track of how many cups are detected in real-time.
3. Handle All Sizes: Make sure the system works for all types of cups, from small to large.
4. Accuracy: Minimize errors in detecting and counting cups.

Related Work

Some AI technologies, like object detection (e.g., YOLO) and real-time video processing, have been used in retail and inventory management. However, using AI to specifically detect and count cups for beverage management is a relatively new approach, especially in cafes and hotels.

Conclusion

Our project will help cafes and hotels track their drink inventory more accurately by detecting and counting cups in real-time. This will reduce waste and improve cost management, providing an essential tool for the hospitality industry.