

CoaCo: Cold Drink Fetcher

Mission

- Look for cans.
 - If the can is warm, move it to the bin.
→ The bin's location is next to an AruCo marker.
 - Take a new (cold) can, and bring it.



Design

The figure consists of three vertical columns separated by blue vertical lines. The left column, labeled "Perception" in large teal text, contains two dark teal bullet points: "Thermal camera" and "Raspicam". Below these points are two images: a Raspberry Pi camera module with a ribbon cable, and a Seek Thermal mini thermal camera. The middle column, labeled "Decision" in large teal text, contains one dark teal bullet point: "Raspberry pi". Below this point is an image of a Raspberry Pi Model B+ Rev 2.0 with several expansion boards attached, including a WiFi and Bluetooth module. The right column, labeled "Actuation" in large teal text, contains two dark teal bullet points: "Motor: Control wheels" and "Gripper". Below the first bullet point is an image of a black robotic gripper. Below the second bullet point is an image of a fully assembled black and silver robotic arm mounted on a base.

Features

The image consists of three side-by-side panels. The left panel, titled 'Can Detection', shows a close-up of a red can being held by a person's hand; a blue square box highlights the can. The middle panel, titled 'AruCo detection', shows two black and white AruCo markers on a light surface; the marker on the left is labeled 'Id=40' and the one on the right is labeled 'Id=98'. The right panel, titled 'Thermal imaging', shows two plastic bottles on a table; the image is rendered in grayscale thermal-like tones, with a large arrow pointing from the original image to the thermal version.

Timeline