How your method works :

This project implements a computationally efficient method for detecting ArUco markers using Python, with a strict constraint: no GPU acceleration and no deep learning. The solution relies entirely on CPU-friendly, traditional computer vision techniques using OpenCV's ArUco module.

Why it is efficient :

This is efficient because no deep learning is needed. Therefore no gpu needed all processing is CPU-based using NumPy and OpenCV. This is optimized for speed, Grayscale preprocessing reduces input size and ArUco markers are binary, simplifying thresholding and contour extraction.

Any performance or computational advantages:

The algorithm runs efficiently on a single CPU core without requiring multithreading or GPU acceleration. The use of grayscale images and binary patterns ensures low RAM consumption. So, it can easily run on raspberry pi.