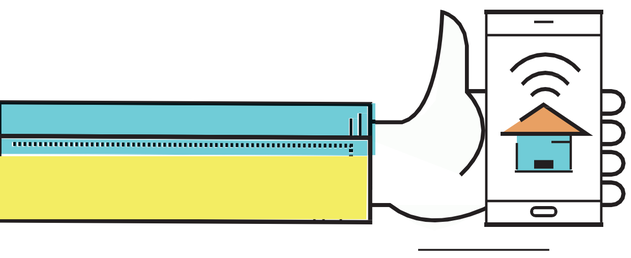


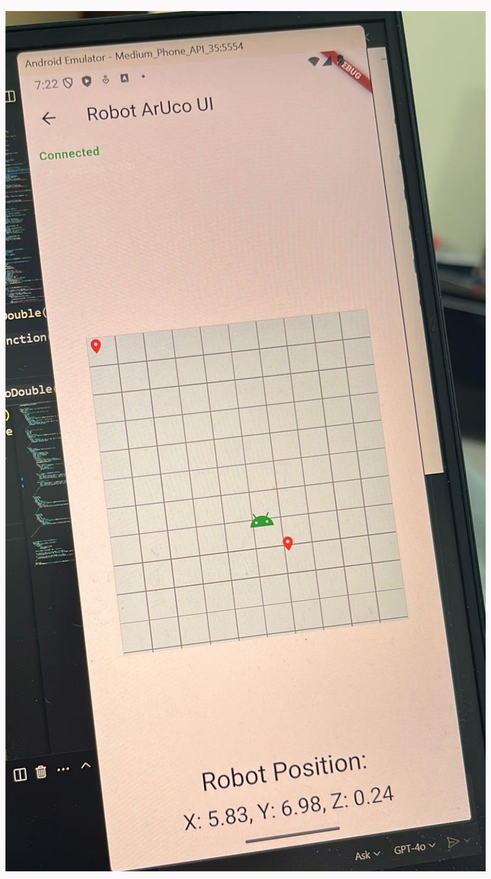
ICST INETRDISCIPLINARY CENTER FOR SMART TECHNOLOGIES
Center of CS Department's Software Engineering Track

Barcode Localization

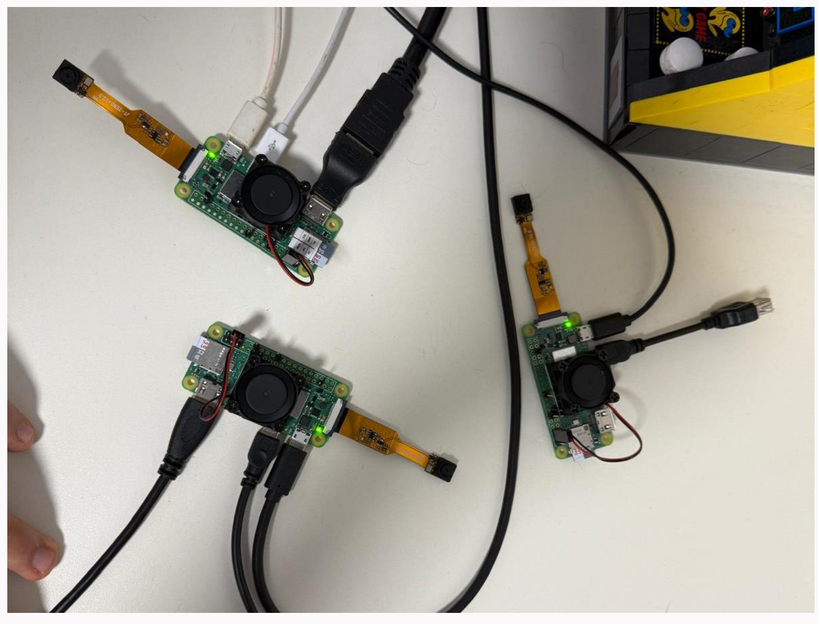
Turning barcodes into real-time positions

We developed a vision-based navigation system for RC cars, addressing the need for low-cost indoor localization using ArUco barcodes to pinpoint the car's location in real-time.
Our system uses multiple Raspberry Pi cameras to map the surroundings and estimate the robot's real-time position and orientation.
Using our Flutter app, users can define room layouts, place markers, and set navigation goals, enabling the system to autonomously command the car to its target.

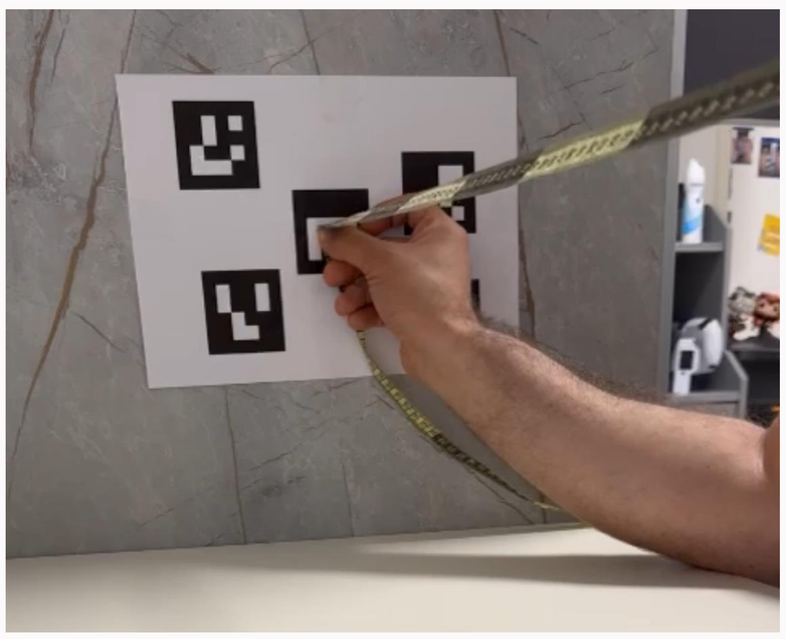
our RC car



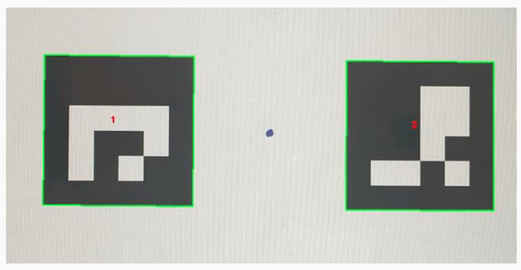
Car's live location in the app



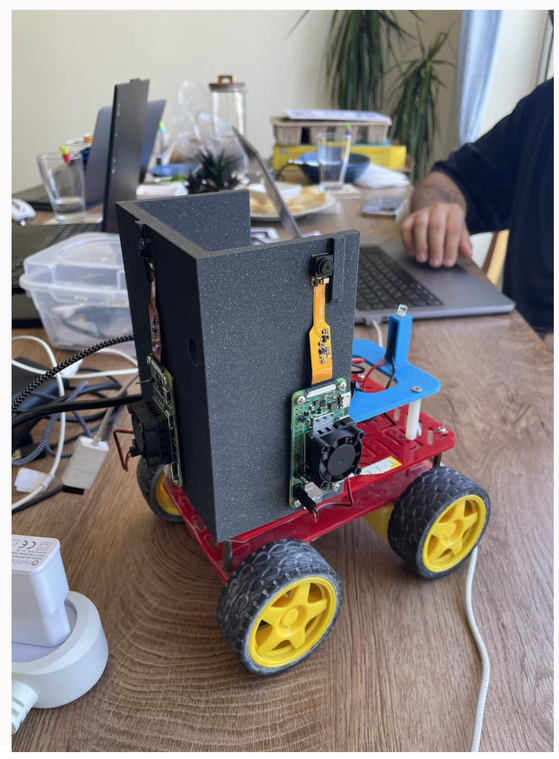
The Cameras



Validating localization accuracy



ArUco detected by camera



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A Project in Internet of Things (IoT)

Computer Science Department
הטכניון מכון טכנולוגי לישראל