

FollowBot Android Application

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Motivation

People carry things everyday and everywhere

E.g.: airport luggage, groceries, military equipment etc.

What if a robot can do it for us?



Suggested Solution

Inspired by biological behavior

Human-following robot

Low-cost equipment

Only an Android smartphone and an interface board required



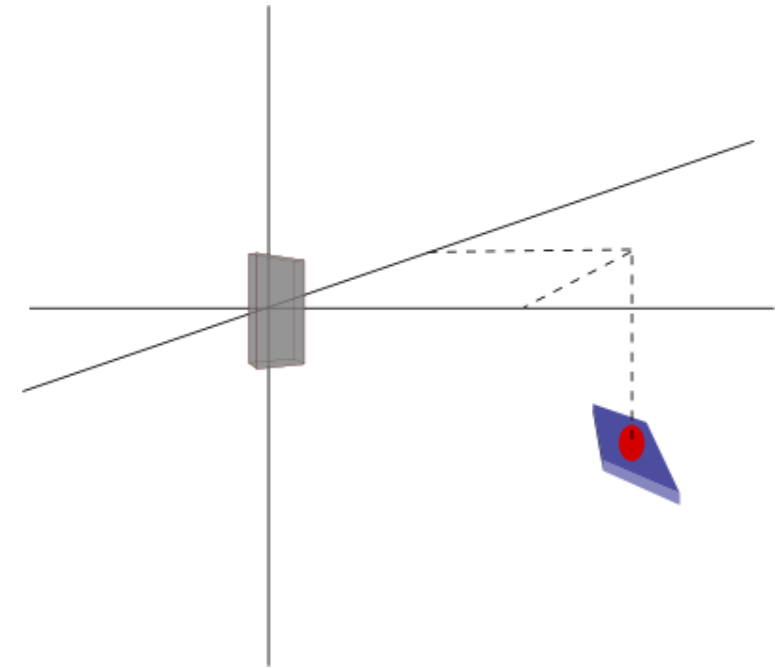
How can it be done?

Initial estimate of the robot's position and orientation

Use colored, spherical shaped markers to track the robot

Detect markers using thresholding and Hough transform

Use simple algebra and geometry to obtain the transformation matrix



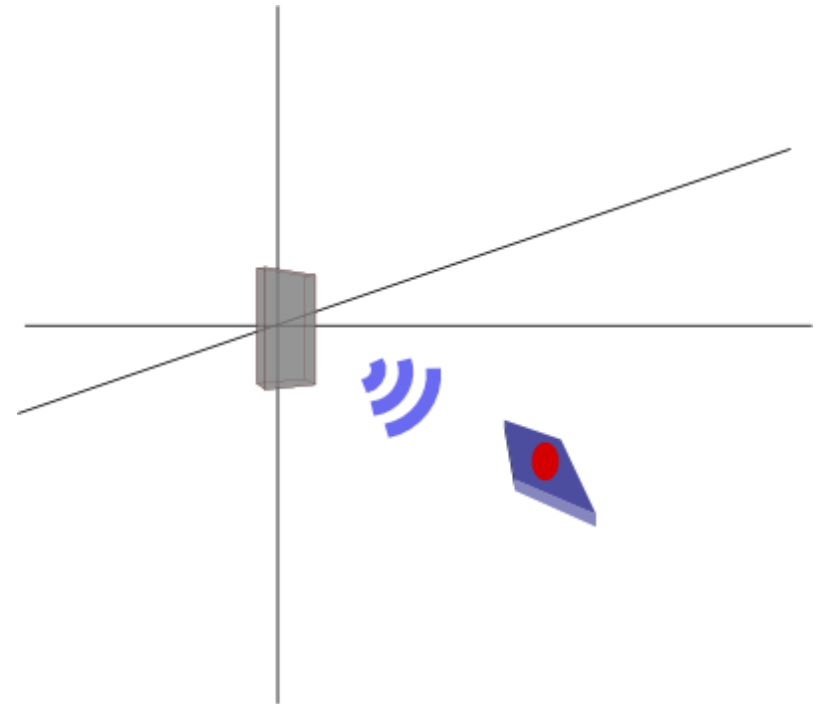
How can it be done?

User's activity monitored using the accelerometer data

K-NN classifier used to differentiate between standing, walking or running

Obtain a new estimate of the robot's position using a particle filter

Estimations based on Bluetooth RSSI (Received Signal Strength Indicator) and phone orientation



Thank you for your attention!