

Fabulous Four

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Motivation

Having a good arc is essential to shooting any kind of basketball shot. Our system will help train players to shoot with the optimal arc.

An existing system that uses Computer Vision to track the arc of the basketball, the Noah Select system, is \$6000.

Our goal is to achieve comparable functionality using sonar range sensors to make the system affordable for any basketball team.

Objective

- Affordable basketball trajectory tracking system to assist in foul shot training.
- Competitive functionality with exist Computer Vision system.

Development Environment

Hardware

Robostix/Gumstix, LV Maxsonar EZ0

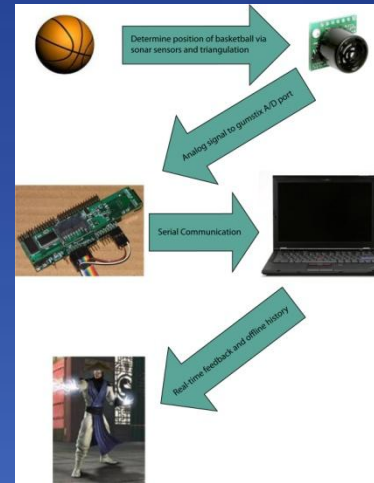
Software

C and ARM assembly

Protocols

RS232 Serial communications, I2C

Architecture



- Collect distance data from 4 sonar sensors.
- Use triangulation to pinpoint location of basketball.
- Use the 3 data points to extrapolate the arc of the basketball and angle of entry.
- Compare to optimal arc.
- Give immediate audio feedback to user .

Results



- Frame allows sensors to be closer to the ball which results in more consistent data.
- The frame also protects sensors from impact with rebounding basketball.