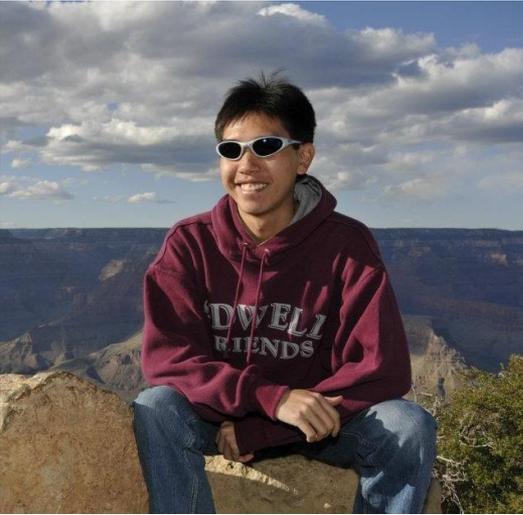# Team BrightGoal

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Contents

1. the **Idea** for our project

2. **Analysis** of our Competitors

3. the **Requirements** to implement it

4. a list of **Parts** to build the architecture

5. the **Architecture** we run

6. **Risks** and ways to **Mitigate** those risks

Idea

Interactive Soccer Trainer
- Lights on the floor simulate soccer ball and drills
- Special shoes track movement and ball interaction
- Works on and off the field

Motivations for BrightGoal
- Furniture and valuable items are safe
- Improve ball skills even in a small area
- Fun interactive activity for kids and adults

Competitive Analysis

Entertainment

- Brightlogic Active Floor
- Mediatec Interactive LED Floor
- Ground FX Interactive Floor Projection

Sports

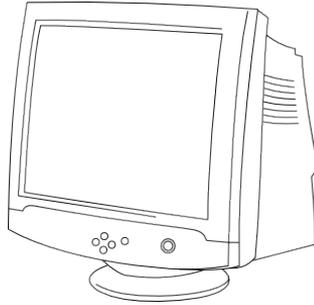- Interactive Sports Technologies
- Match Analysis
- Vertigo Systems

Requirements

- Accurate motion tracking
- Low Latency
- Rugged hardware
Its going on people's feet

- Fun
- Immersive
- Well Designed
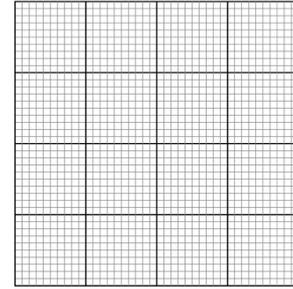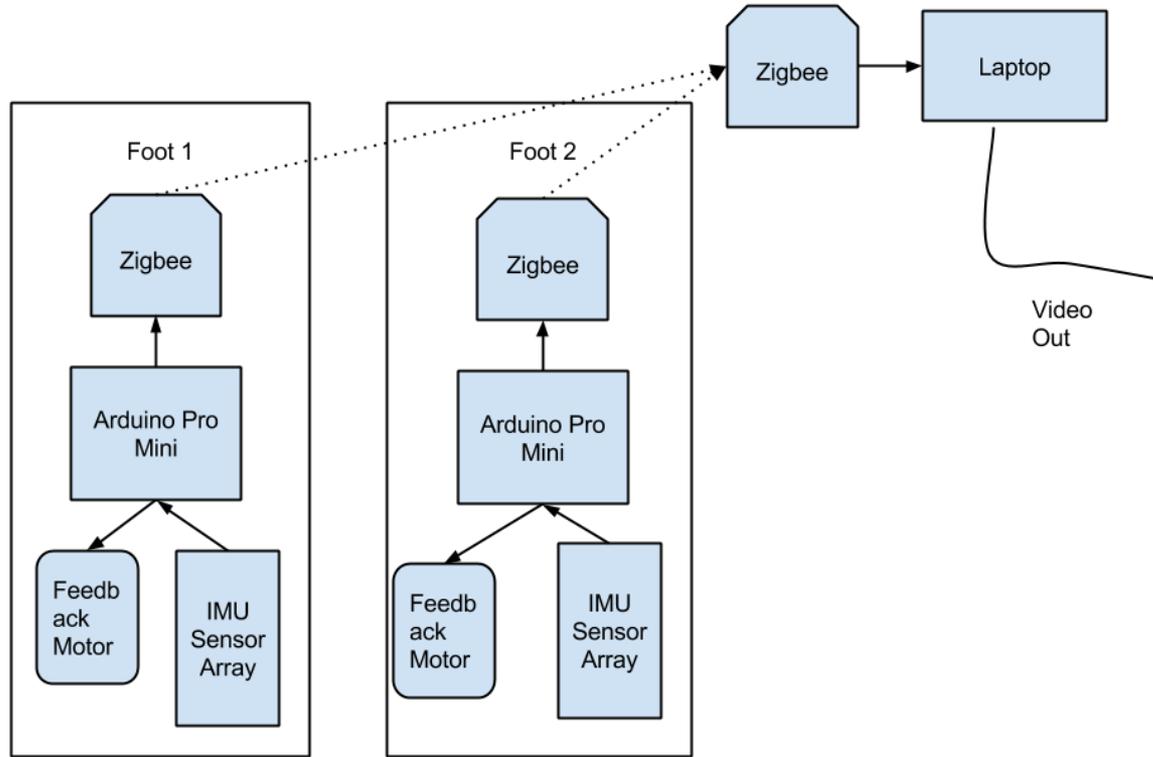- Useful in real life
- Intuitive

Parts

- Arduino Pro Mini
- 9 Degrees of Freedom Inertial Measurement Unit
- Zigbee Xbee
- Battery (Li-Ion)
- Battery Charger
- Vibration Motor
- Housing

- XBee Explorer Dongle
- Zigbee Xbee

- Plexiglass Housing
- LED Floor Panel(s)

Architecture Diagram

Risks and Mitigation

Risks

1. Difficult to demo, need a decent chunk of infrastructure

2. Getting position of feet within a 3D space

3. Ensuring low latency of system to provide an immersive experience

Mitigation

1. Get some sponsors on board who can provide expensive components

2. IMU will track position - most likely need to recalibrate

3. Zigbee has low latency, but alternative is bluetooth