

Disc Golf Flight Analysis

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Problem: Putting in Disc Golf is Very Difficult



- Throwing consistently is hard
- Lots of variance in throws due to changes in angle and power
- Lack of data to create repeatable results



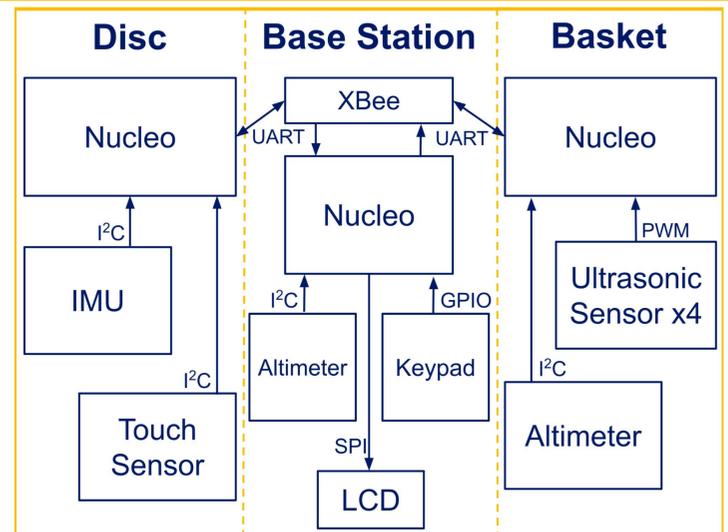
Solution: Get Precise Statistics for Perfect Practice

- **Data Collected:**

- X, Y, Z acceleration
- Euler Angles
- Heading
- Timestamp accurate to 0.103 seconds

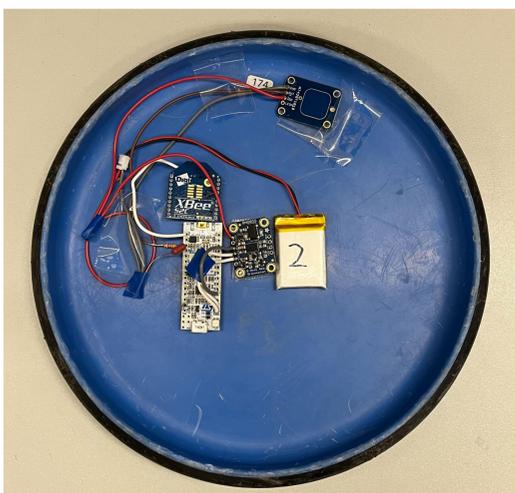
- **Statistics graphed and shown on display:**

- Nose Angle, Hyzer Angle, Peak Velocity, RPM, Altitude Difference to Basket



Implementation: System of Sensors to Provide Feedback

Disc



- **Touch Sensor**

- Data collection starts when touch sensor is released

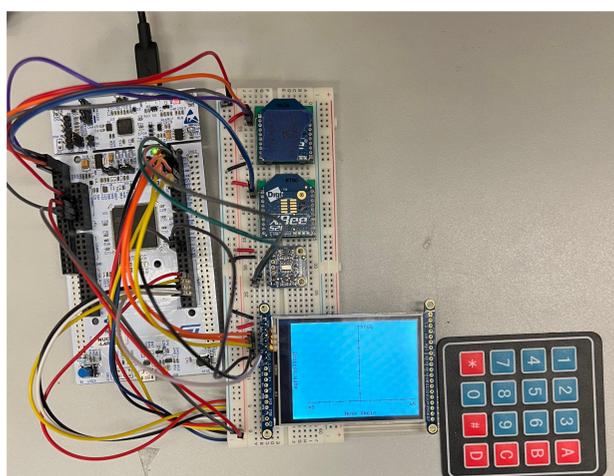
- **Data Collection**

- IMU collects data but does no processing

- **Xbee**

- Sends data to base station for processing

Base Station



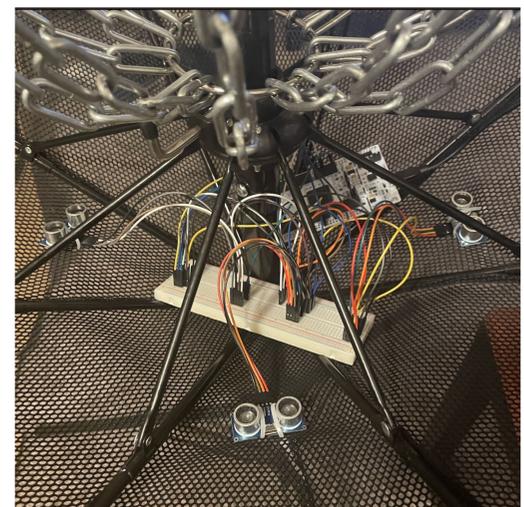
- **Data Processing**

- Receives data from IMU via Xbee and calculates statistics

- **Display**

- Cumulative statistics summarized & graphed
- Uses numeric keypad to navigate screens

Basket



- **Ultrasonic Basket Detection**

- Four input capture timers
- One PWM timer
- Distance threshold to avoid counting spit outs

- **Altimeter**

- Measures barometric pressure to get altitude in meters