SLOW-PITCH SOFTBALL CAMERA:

WEEKLY UPDATES

SDMAY25-11

THIS WEEK'S DEVELOPMENTS

DATA COLLECTION

Trained object detection model for accurate results

FLUTTER CAMERA

A mobile app allows for an affordability and portability.

SCREEN SKETCHES

A setup calibration allows for adaptability to each field

CALIBRATION

Fast computing language to analyze camera video

DATA COLLECTION

- Southwest Recreation Softball Fields
- Heights of 12ft, 10ft, and 6ft were recorded
- Replacing frames from camera input to video input allow for testing capabilities
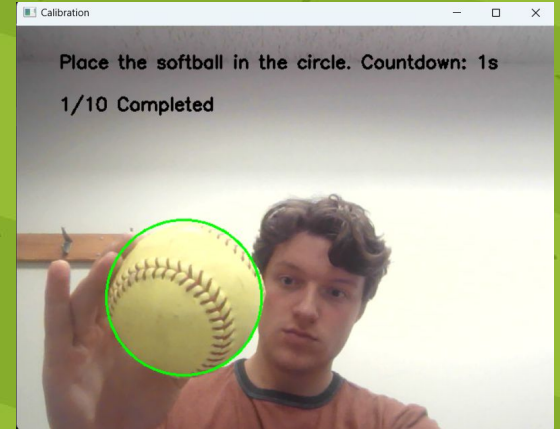
CyBox Videos

CURRENT DETECTION MODEL

Distance: −1.12 yards
Angle: −0.04 rad
Height From Camera: 1.05 yards

- Object Detection
    - Using non-machine learning to detect softball by color
    - Given a specific range of colors, the softball can be detected quickly
    - Setbacks
        - Softball colors can change based on lighting or ball
- Height Detection
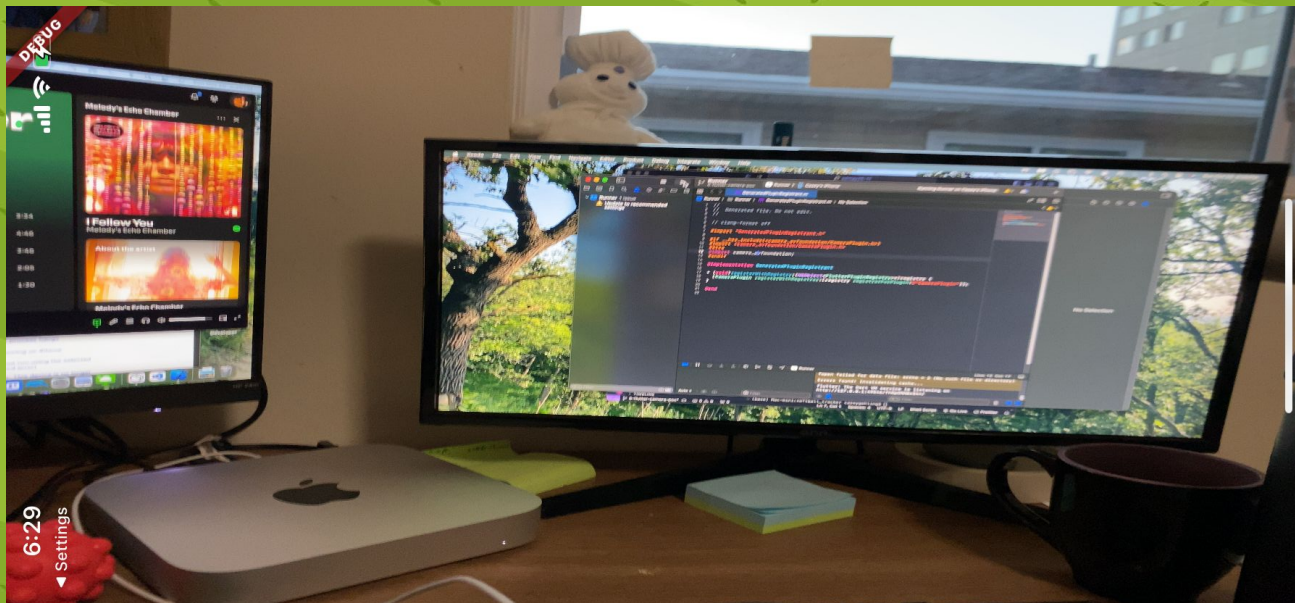   - Trained model to output distance given ball radius and camera position

CALIBRATION

- Dealing with the color ranges for each game's lighting/ball

- Prompts ball to be placed at a random position distance from the camera

- Calculates the average color recorded from the known ball positions

- Allows for the detection script to be personalized for each game's lighting/ball

FLUTTER CAMERA POC
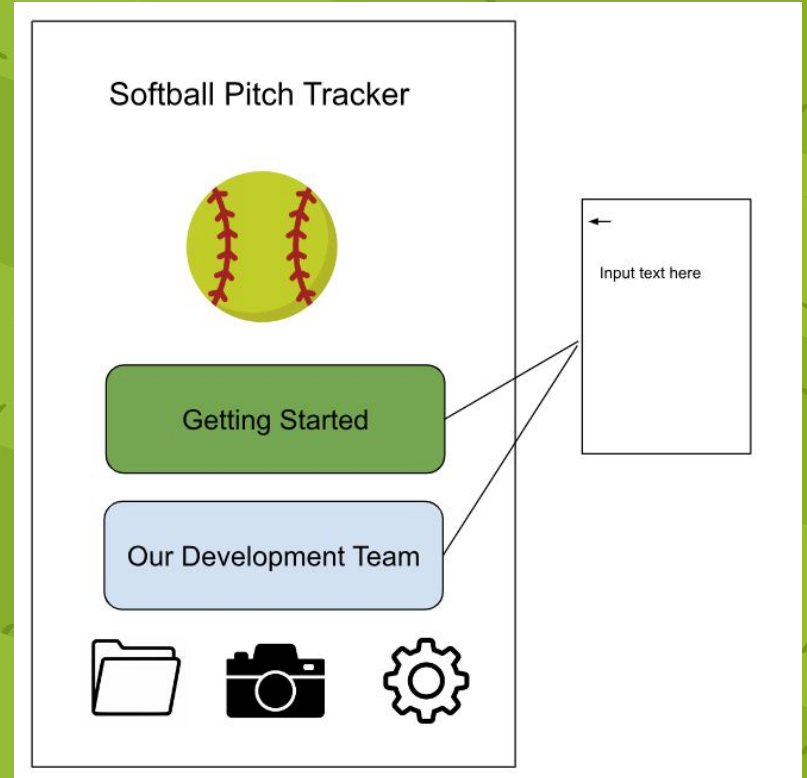
PROTOTYPED

SCREEN SKETCHES
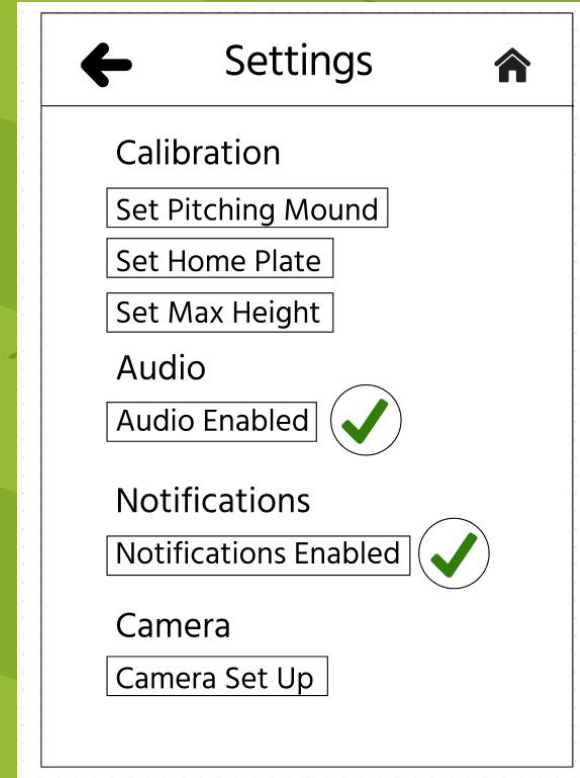
HOME

- Shows links to other pages
    - Camera
    - Past Pitches
    - Settings

- Popup text pages
    - Introductory "Getting Started"
        - Calibration, settings, how to use
    - Our Dev Team
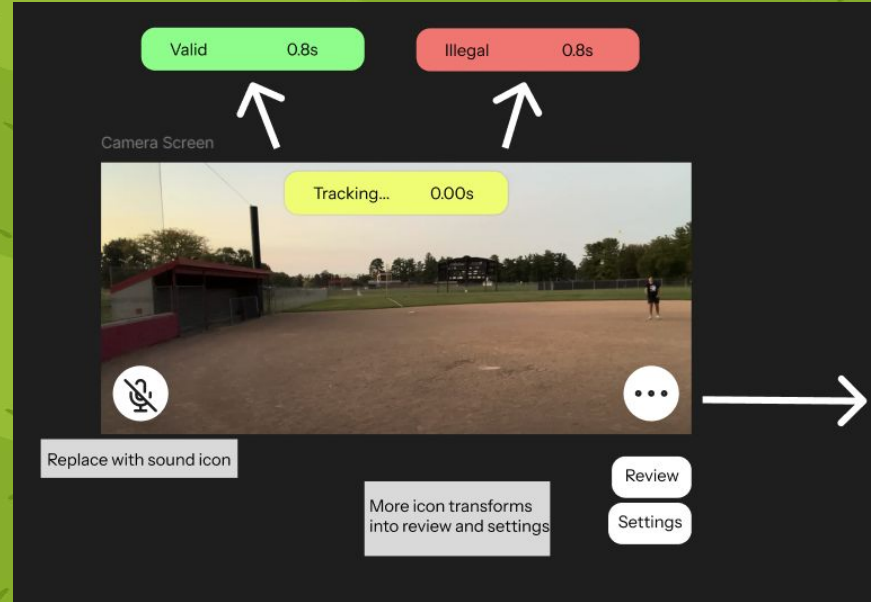   - About us, our project page

SETTINGS PAGE

- Calibration Settings
    - Settings entered by the user to help define the environmental setting
- Audio
    - Direct the output audio to a specific device
    - Specific audio settings (volume, alert message)
- Notifications
    - Permissions to send relative app notifications
        - "We noticed you left in the middle of recording. Click here to continue.
- Camera Setup
    - Starts a calibration script to record the camera's distortive effects
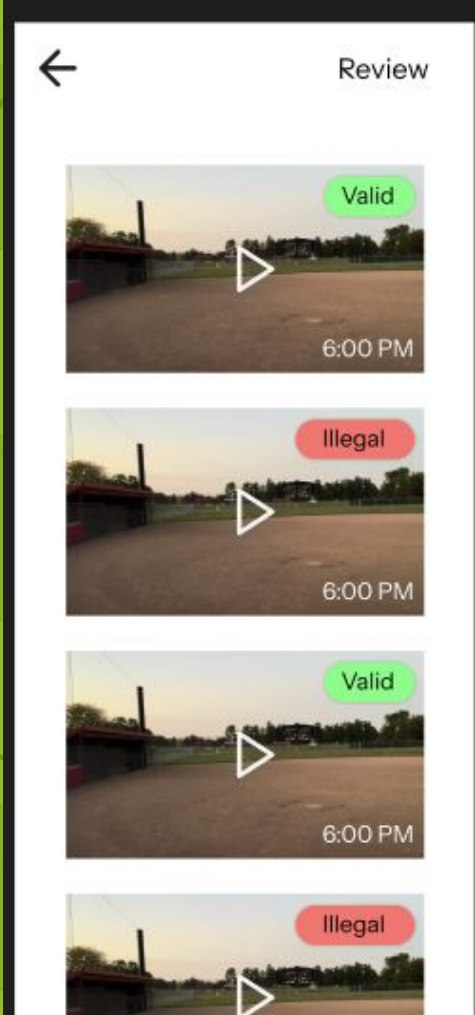
PITCH DETECTION

- Show the Tracking/Valid/Illegal along with time in seconds

- Show icons for sound/review/settings to navigate to the alternative pages

- Show the camera output on the screen

REVIEW

- The camera detection will be paused on opening the review page

- Contains the most recent pitches of the current detection run
  - Timestamps
  - Valid/Invalid

- Each video can be played to review the pitch

- Potential Feature
  - Option to report a pitch as incorrectly tracked

PAST PITCHES

- Past pitches will look similar to the review screen

- Shows past pitches from all time usage

- Shows date and time

- Each video can have the option to be exported