SE 491 - sdmay20-44
Decision Support in Racket Games
Week 5

9/10 - 9/26
Client: Simanta Mitra
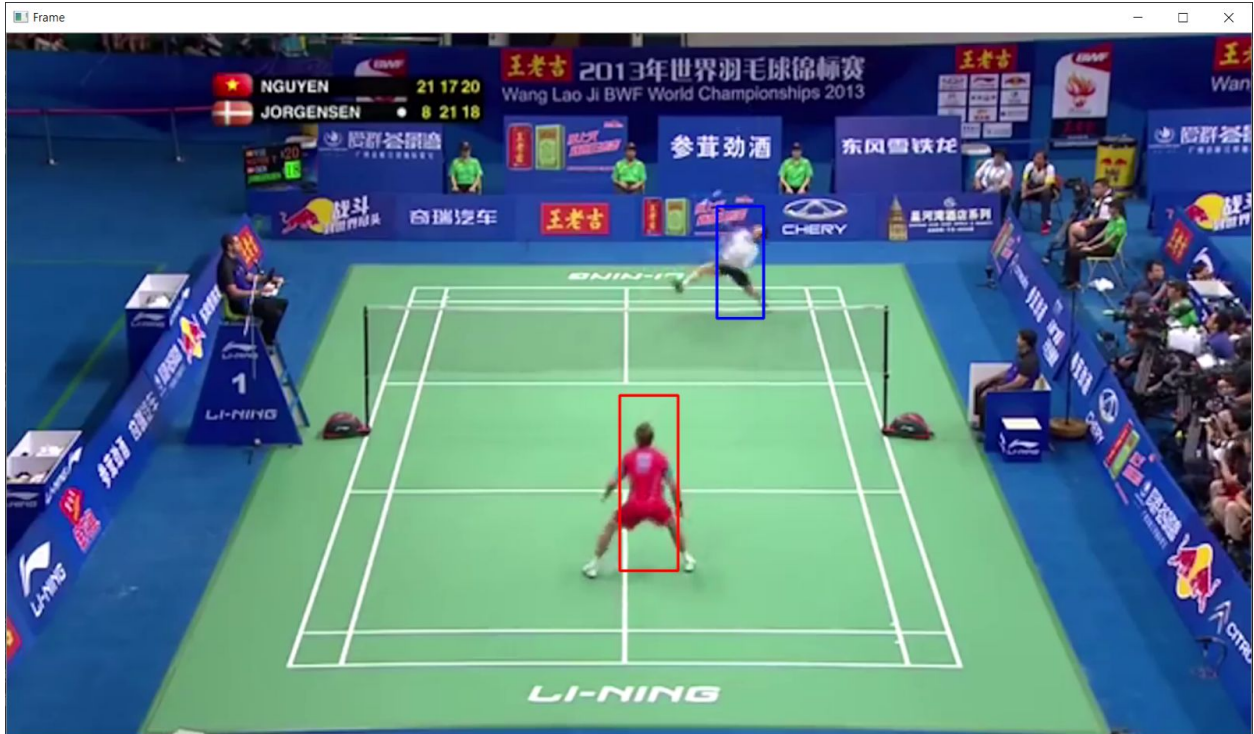Faculty Advisor: Simanta Mitra

Team Members

Benjamin Kramer
Brian Guidarini
Katelyn Sinn
John Rachid
Christion Barnes
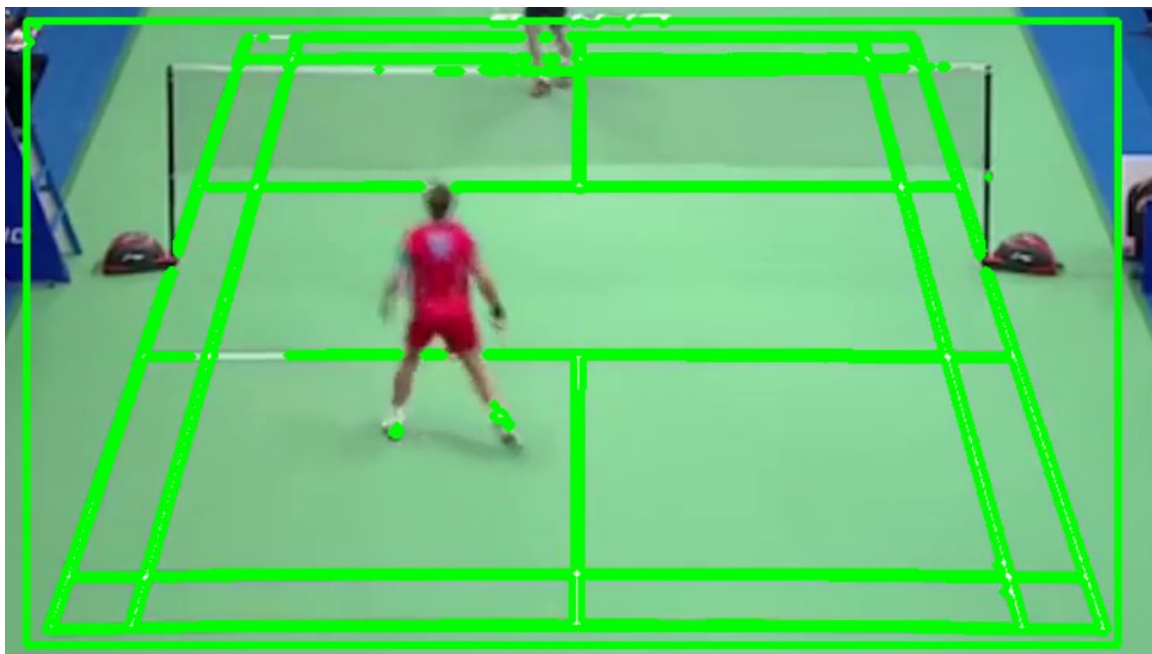Aiden McMinimy

Accomplishments

- Basic Birdie Identification - Ben
  - Looked into best options to identify the birdie in a video. This started with built in tracking algorithms, but has since become something more complex using motion isolation to more accurately identify the ball.
  - Implemented an averaging algorithm to= get a more accurate idea of where the ball is.
  - Got feedback from Dr. Mitra, who suggested adding color to the birdie may be the way to go.
  - Much more work will be needed in the upcoming weeks to get a more specific idea of where the birdie is.

- Player tracking - Brian & Aiden
  - Used computer vision to track two players in a sample video.
  - Looked into methods to boost performance.

- Court identification - John and Katie
  - Located contours in the image within the region of interest
  - Drew contours with an offset from the region of interest.
  - Experimented with keeping only the largest contours.

- Birdie Identification - Christion
  - Located contours in the image within the region of interest
  - Drew contours with an offset from the region of interest.
  - Experimented with keeping only the largest contours.

Pending Issues

- Birdie identification is far too inaccurate. This will need to be made more accurate. - Ben

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Benjamin Kramer	Basic birdie identification	8	24
Katelyn Sinn	Court detection using corners	6	18
Brian Guidarini	Player recognition	6	15
Christion Barnes	Birdie Identification	6	18
John Rachid	Court Recognition	7	17
Aiden McMinimy	Player Recognition	6	16

Upcoming Tasks

- Play Badminton and record a new video for making tests - Everyone
  - We all need to learn the rules of the game a bit better and get a video that is more suited to our needs.
- Birdie Identification Improvements - Ben
  - Color the birdie to help it stand out from the rest of the video
  - Come up with better algorithms to compensate for the small size of the birdie
  - Speak with a faculty member who may be able to give some advice
- Court Detection Improvements (using corners)- Katelyn
  - Improve corner detection of court and filter out other objects using color threshold
- Court Detection Improvements (using straight lines)- John
  - Identify only lines of a certain length on the court.