Welcome to Pair Interaction Detector Software by RGB cameras:

Tools:

1. Four cameras 'logitech c920'.

2. One computer.
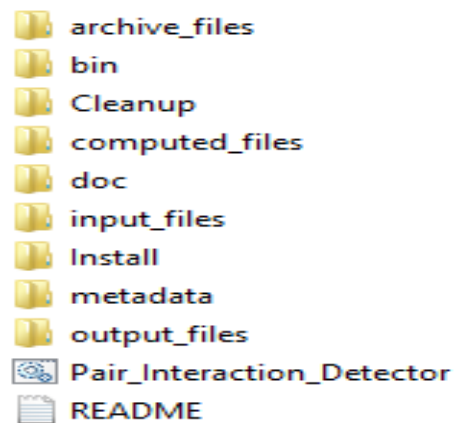
3. Four Players.

Preparation:

1. Each player choose distinct number from {1,2,3,4}

2. Connect all the cameras to the computer

3. Check the number of each camera by 'Start Calibration'

4. Player 'i' sitting against the camera 'i'

5. The players should sit as circle form
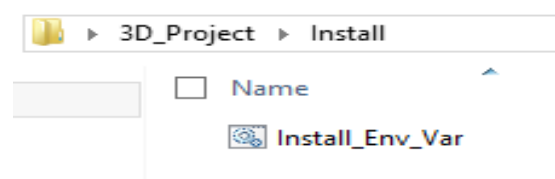
Important Issues:

1. Don't change folders order!

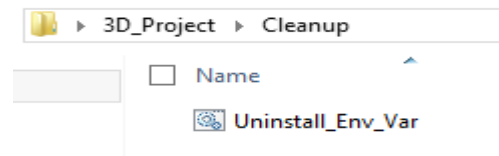2.Don't rename any file!

Files Structure:

Installation:

**Execute** the script into "Install" folder named **'Install_Env_Var.bat'** by double click.

Uninstallation:

Execute the script into "Cleanup" folder named **'Uninstall_Env_Var.bat'** by double click.

```
▶ 3D_Project ▶ Cleanup

☐   Name
      🔩 Uninstall_Env_Var
```

How To Use:

1. Execute the script named **'Pair_Interaction_Detector.bat'** by double click - you'll see a

    graphic user interface for handling this application

2. You have a few buttons to use:

   * **'Start Calibration' :** Open four cameras for making the calibration by sitting order.

   * **'Start RT Recording' :** Open four cameras for scene real rime recording

   * **'Save Output Video'** : Save the output. it is including the files - Matches.csv
[participate sights,bi-directional sights between participates], Processed_Frames folder that
contains processed video recorded frames for next matches analyzing, Video.avi file that
contains processed video of last scene

   * '**Save And Show Output Video'** : Performing 'Save Output Video' method and than
showing the processed video as a service
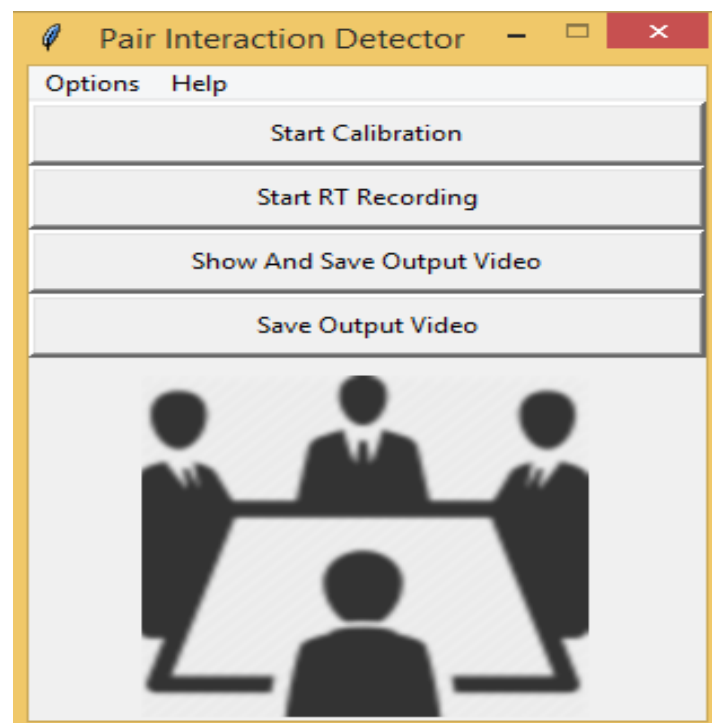
Explanation about the process:

1. **Calibration:**
   1.0 Press on **'Start Calibration'**, a window with the camera view should open
   - 1.1 Ask the first player to look at the second player
   - 1.2 2 Press **'2'** on the keyboard
   - 1.3 If the image is blurred, then press again until you have a good image
   - 1.4 Press **'esc'** button to finish with this participate

   2.0 Ask the first player to look at the third player
   - 2.1 Press **'3'** on the keyboard
   - 2.2 If the image is blurred, then press again until you have a good image
   - 2.3 Press **'esc'** button to finish with this participate

   3.0 Ask the first player to look at the four players
   - 3.1 Press **'4'** on the keyboard
   - 3.2 If the image is blurred, then press again until you have a good image
   - 3.3 Press **'esc'** button to finish with this participate

   4.0 Ask the first player to look straight
   - 4.1 Press **'5'** on the keyboard
   - 4.2 If the image is blurred, then press again until you have a good image
   - 4.3 Press **'esc'** button to finish with the first player

- After doing as the same concept for all participates move to step 2.

2. **Real Time Recording:**
   1.0 Press on **'Start RT Recording'**, a window all cameras view should open
   2.0 Make some group meeting with interactions and talking between the participates
   3.0 Press **'esc'** to finish the recording

- All frames will be saved in **'input_files'** directory

3. **Save Output Video:**
   1.0 Press on **'Save Output Video'**
   2.0 If there is no calibration frame and real time recording frames into **'input_files'** and their computations into **'computed_files'** it cannot continue and will raise a pop-up message as form of:
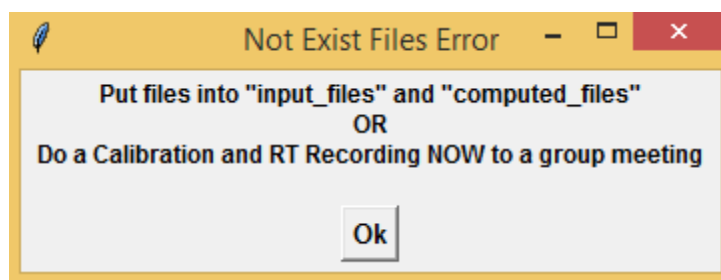

   3.0 At this time all frames that were took at last process is computing and preparing an output
   4.0 At the end of the processing you can except to see all frames in 'input_files' into '.zip' file and into 'output_files' a folder that is containing Processed_Frames of that process, Matches.csv that is containing matches of each frame from the video and the video recorded file itself.

Output folder example:

📁 Processed_Frames
📊 Matches
🎞 video
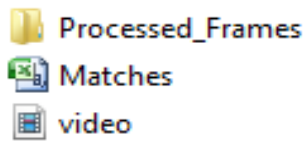
4. **Show And Save Output Video:**
   1.0 Press on **'Show And Save Output Video'**
   2.0 The same functionality will apply
   3.0 At the end computations and saving the video will be showing by the application
   4.0 You can stop the showing using **'esc'** button each time

- **For more informations, Examples and documentations you can address our github repository or the web page in the university projects site:**
   - **Github repository: https://github.com/itaycsguy/3D_Cameras.git**
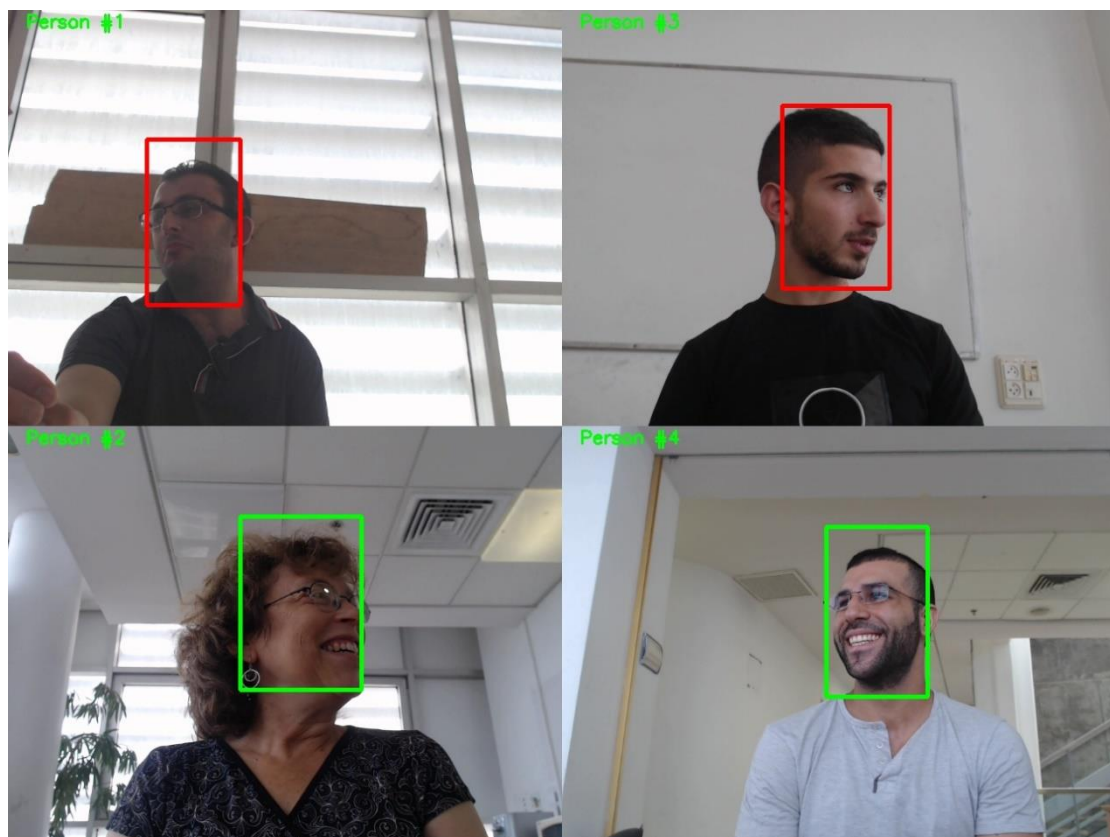
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Instructor: Prof. Hel-Or Hagit

Thanks and have interesting execution!