

Instructions for EAR MATCHING:

1. Install Matlab's Computer Vision Toolbox by typing "visionSupportPackages" into the command line of Matlab or by following this link to the [Mathworks website](#) and clicking on the "Try or Buy" button. This may take a few minutes. You can check if you already have the toolbox by typing "ver" into the command window as well.
2. Download the file on the linked GitHub repository and add it to your Matlab workspace by storing it where all your other .m files are stored. Oftentimes the .m files will be under "Documents" then "MATLAB."
3. Once all the files are on the Matlab path, you can click on the "app1" file to open the design view of the app that will launch all the other files.
4. Click the "run" button with the green arrow to start the program.
5. If you have someone or a mirror around, ask them to take a photo of your ear and upload it to your computer. Use your computer's preview image function to crop exactly around the ear.
6. Click the green arrow to run the program.
7. Click "browse image" to select the image you uploaded or "take image" to take a new one with your computer's built in webcam.
8. Choose one of the algorithms to run
 - a. Warning: Hu Moment invariants will take a few minutes if the number of rows and columns are too high so aim for between 3-6. Measurement match requires having a ruler or protractor to gather lengths of ear features.
 - b. Approximate Runtimes:
 - i. Hu Moment Invariants: 1-5 minutes depending on on rows/columns
 - ii. Eigenears: >5 minutes
 - iii. HOGI: 2-3 minutes
 - iv. Measurement Match: Instant
9. You can click the reset button to choose a new image and new algorithm.
10. Remember your subject match number!