

Nonphotorealistic Rendering of Speed-Lines

Graphic interface user guide

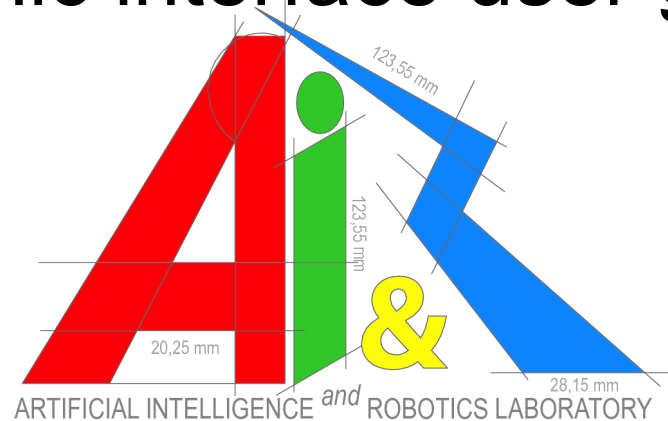


Image Analysis and Synthesis

prof. Vincenzo Caglioti

tutor Alessandro Giusti

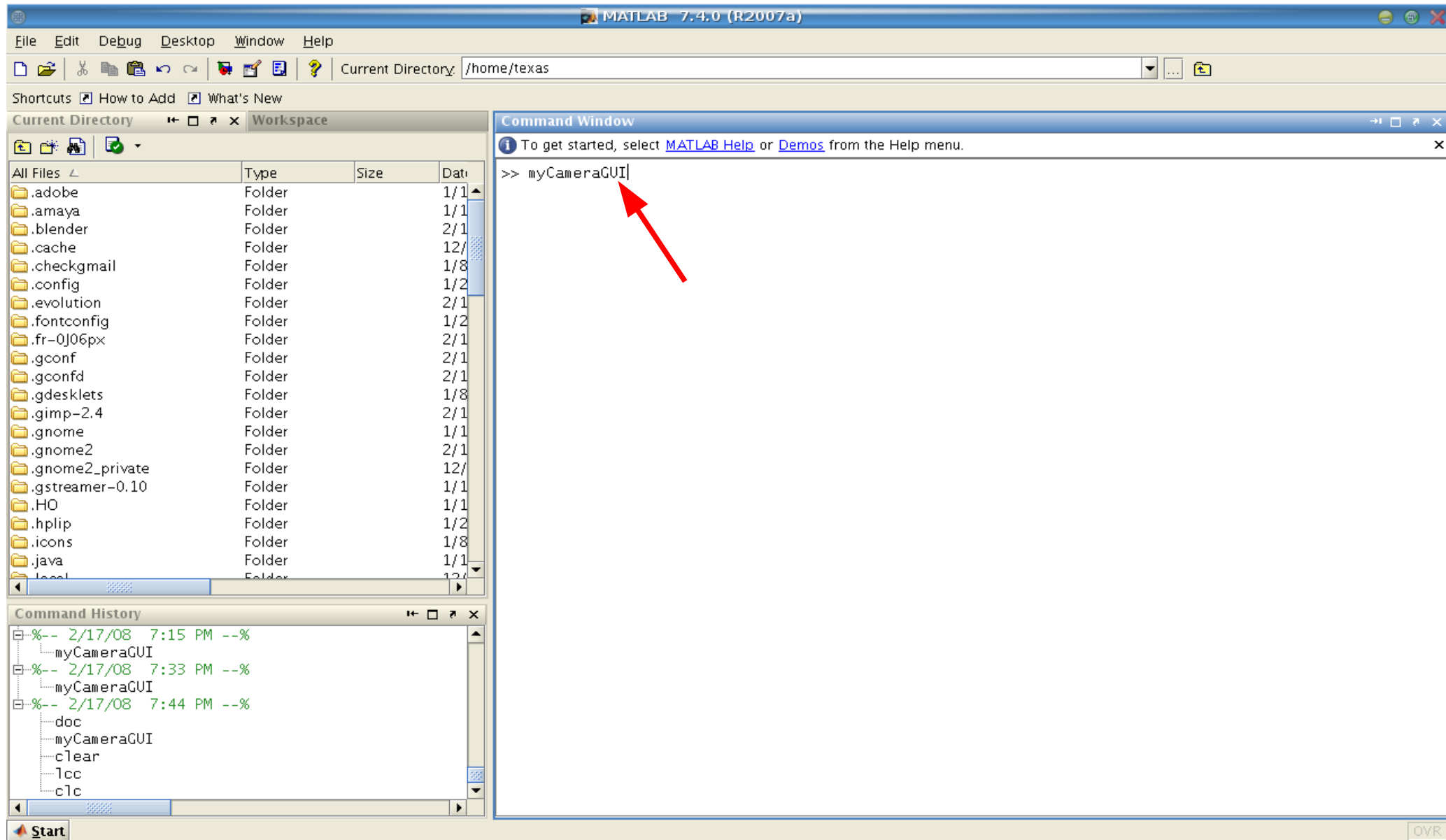
Marco Branca mat.707173

Lorenzo Camerini mat. 706788

Overview

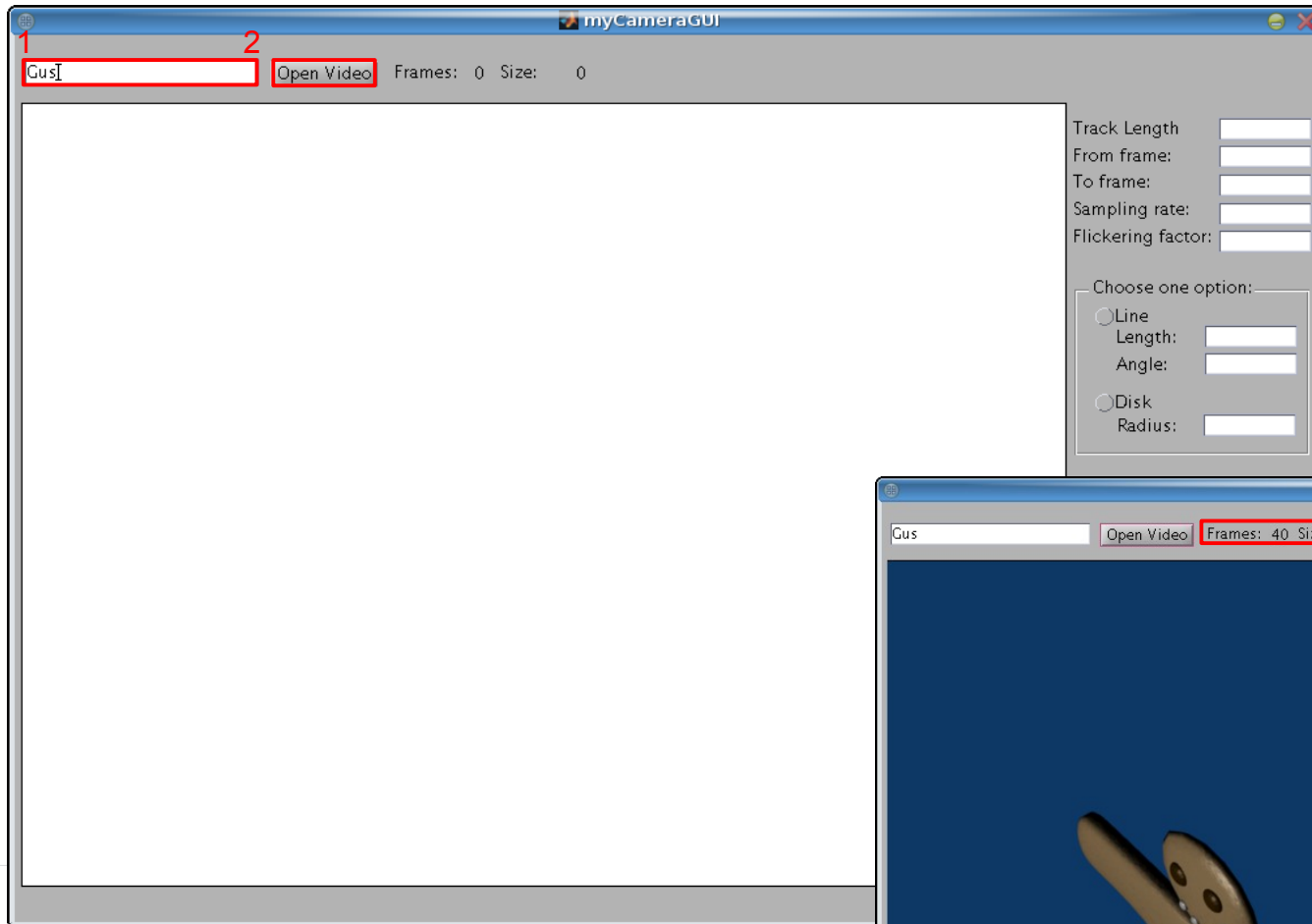
- Getting started
- Open a movie file
- How to draw speed-lines
 - General options
 - Specific options
 - Choice of the technique to apply
 - How to start the computation
- View results
- Save results

Getting started

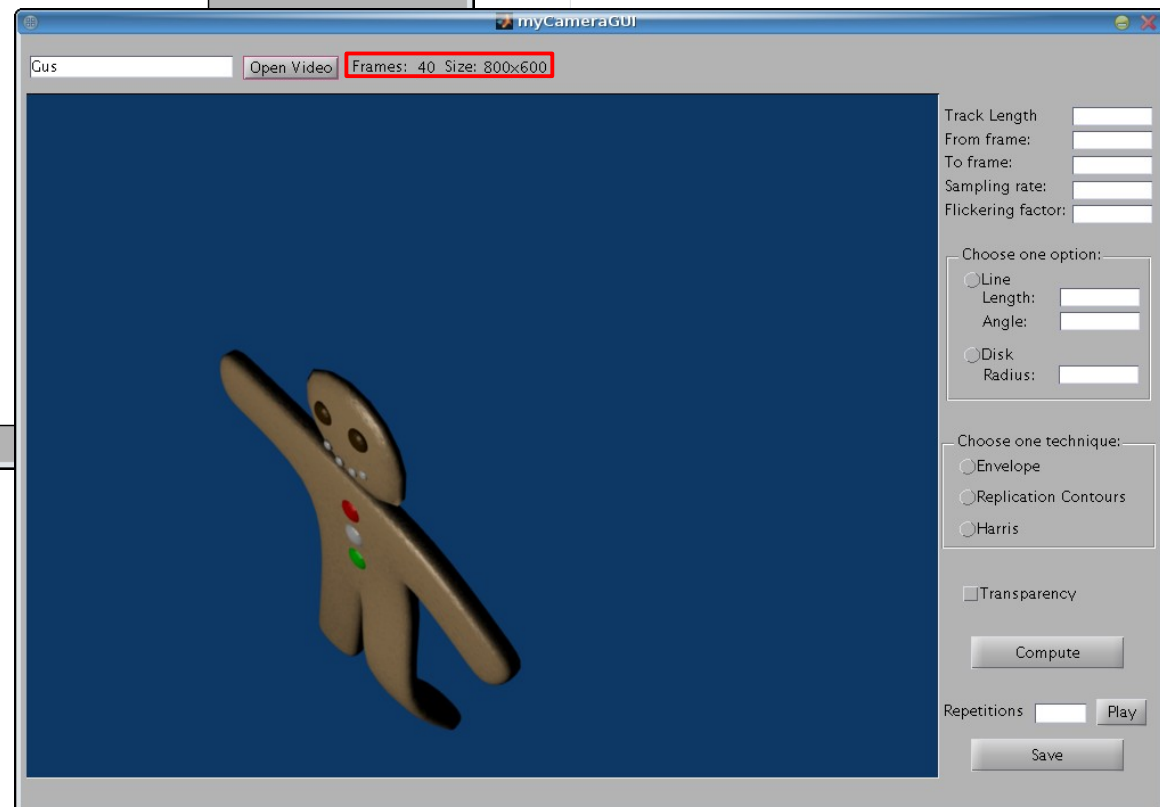


Type in the shell the command *myCameraGUI* to start the graphic interface and press the “Return” button.

Open a movie file



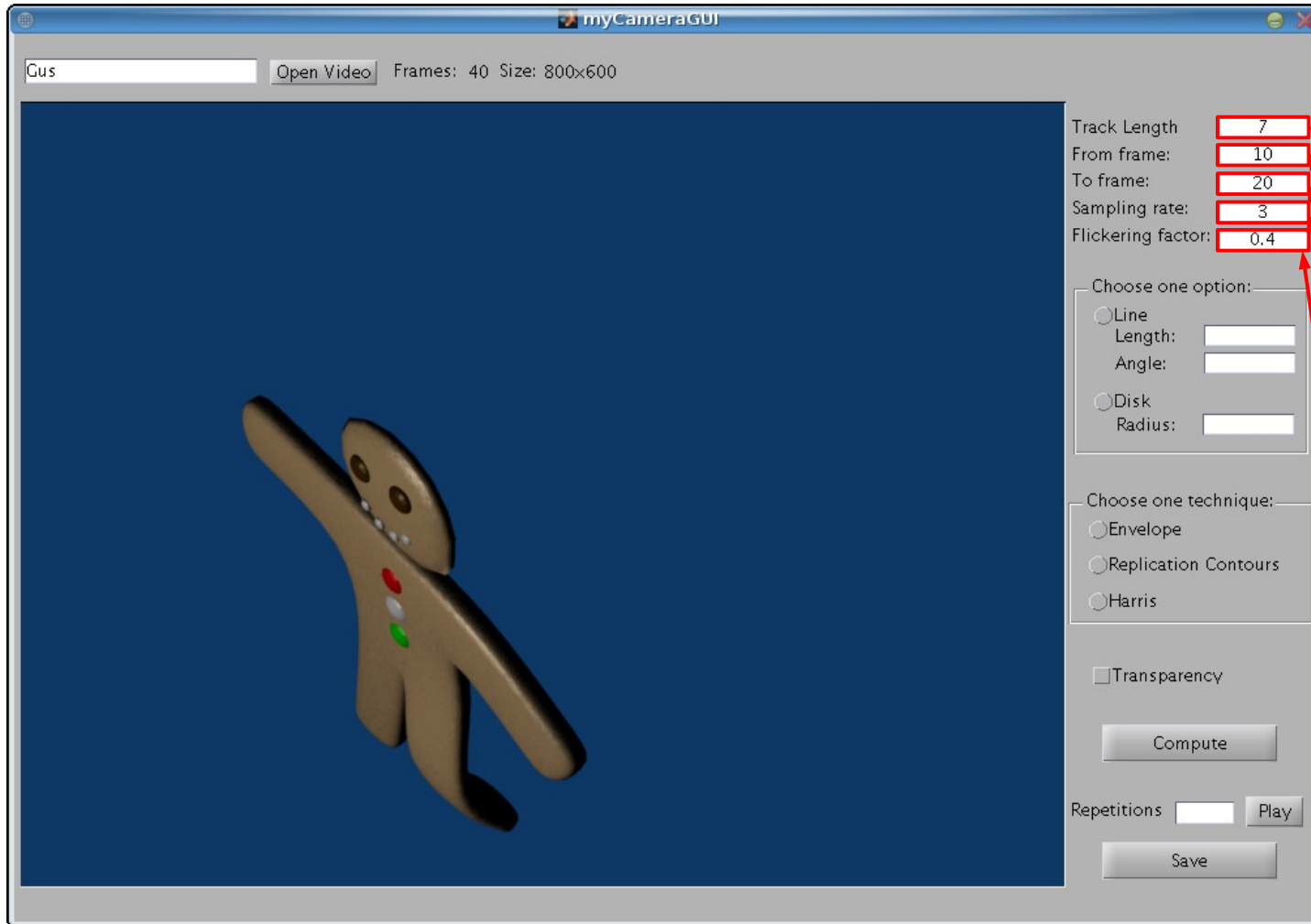
1. Insert the name of the avi file to load.
2. Press the “Open Video” button.



3. In the highlighted box, the application will show some properties of the loaded movie file.

How to draw speed-lines

General options



Choose a value for the following options:

1. Track length: number of frames to consider during track computation.

2. From frame: index of the first frame to analyze.

3. To frame: index of the last frame to analyze.

4. Sampling rate: step to use while considering frames from *From frame* to *To frame*: *1* means that every frame is considered.

5. Flickering factor: probability that indicates whether consider a frame or not during computation: higher probability means not to consider most of frames in *From frame-To frame* range.

How to draw speed-lines

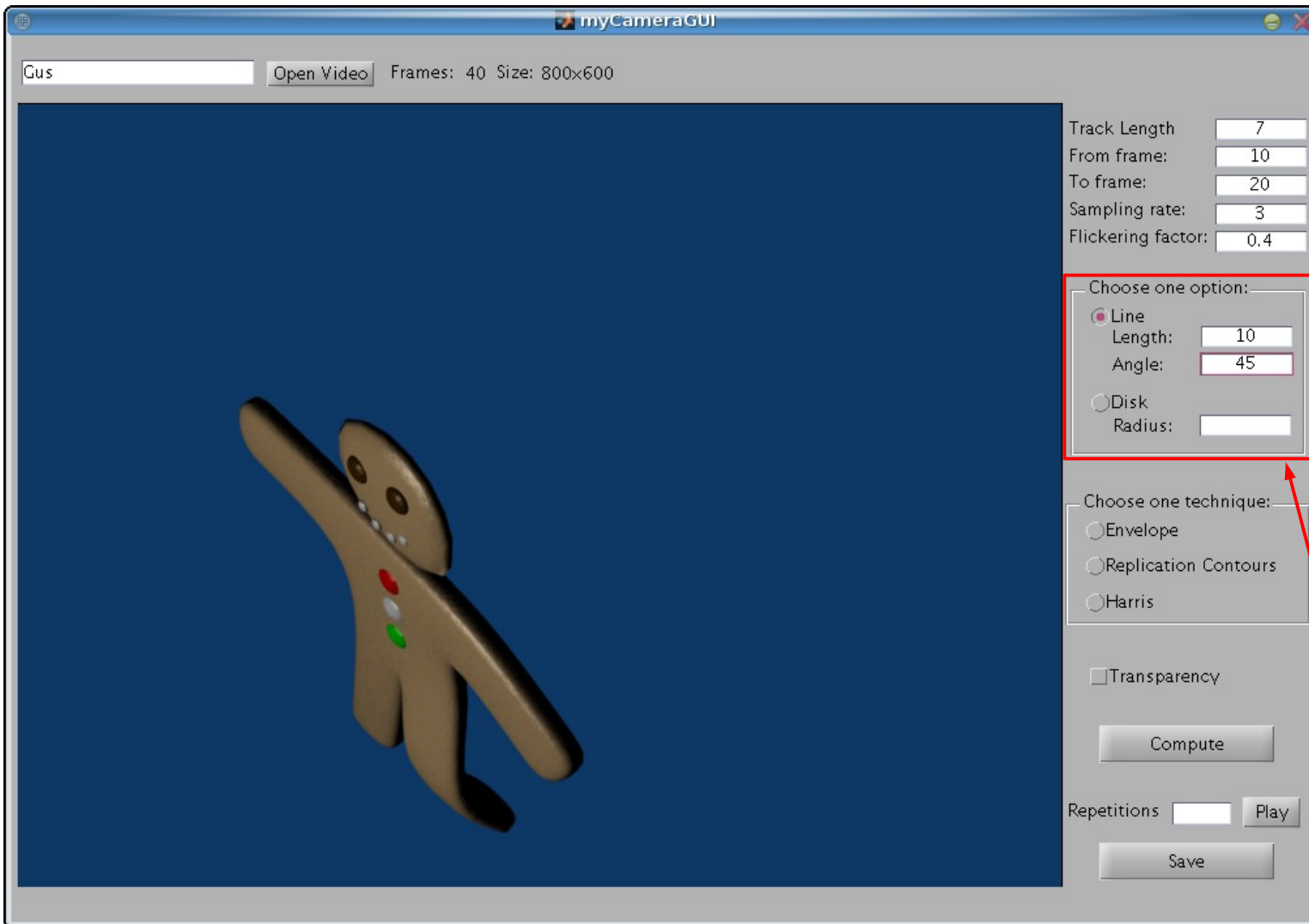
Specific options

Choose one of the following specific options:

These two options are used for the envelope technique for the dilation of the masks.

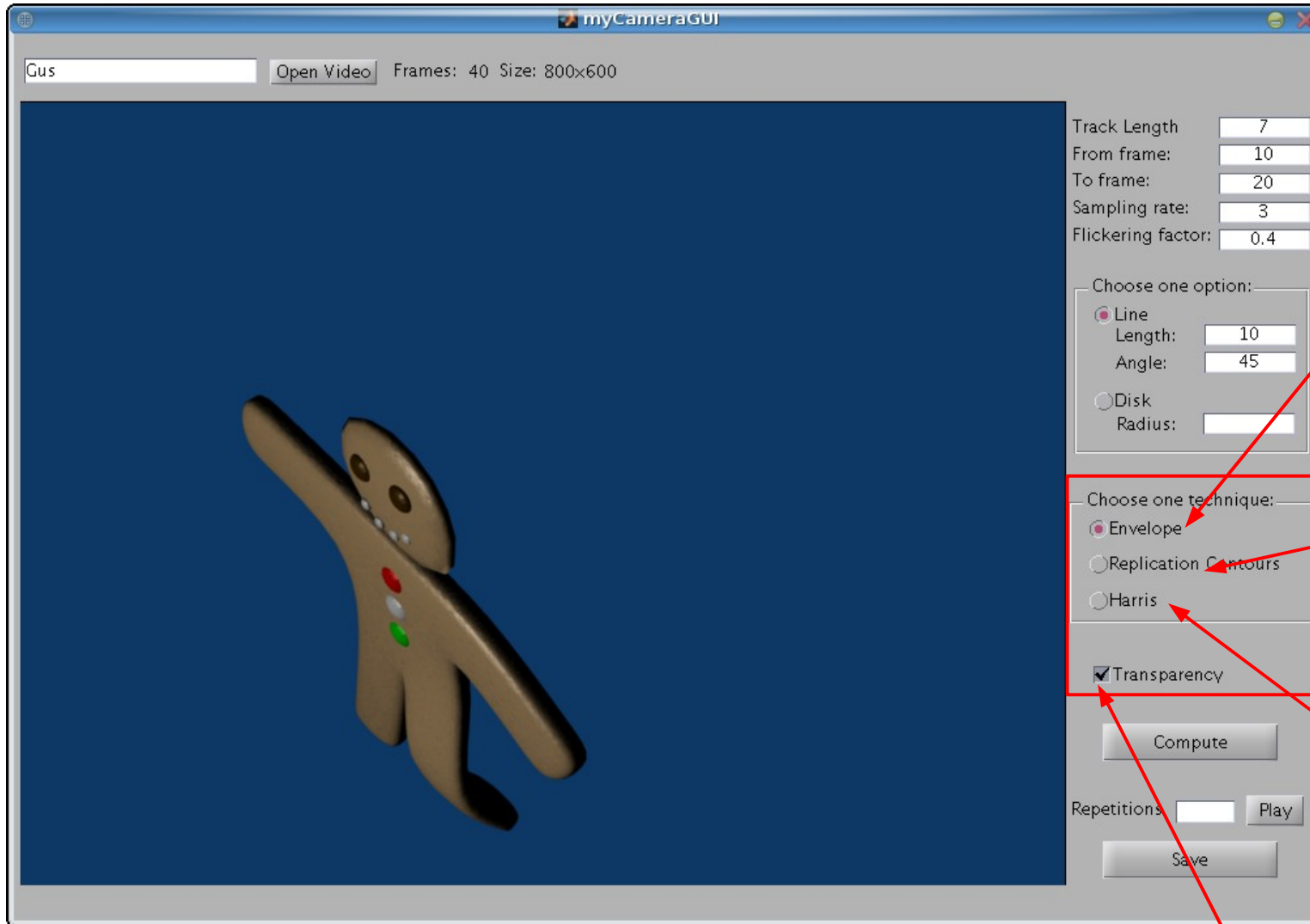
1. Line: the line shape is characterized by two values:
1. Length of the line
2. Angle specifying the direction of the line.

2. Disk: the disk shape is characterized only by the radius size.



How to draw speed-lines

Choice of the technique to apply



Choose one of the listed techniques:

These techniques differ one from each other in the way of drawing the track of the subject

1. Envelope: draws the track by taking in consideration the intersection of the edges of the subject in the previous frames.

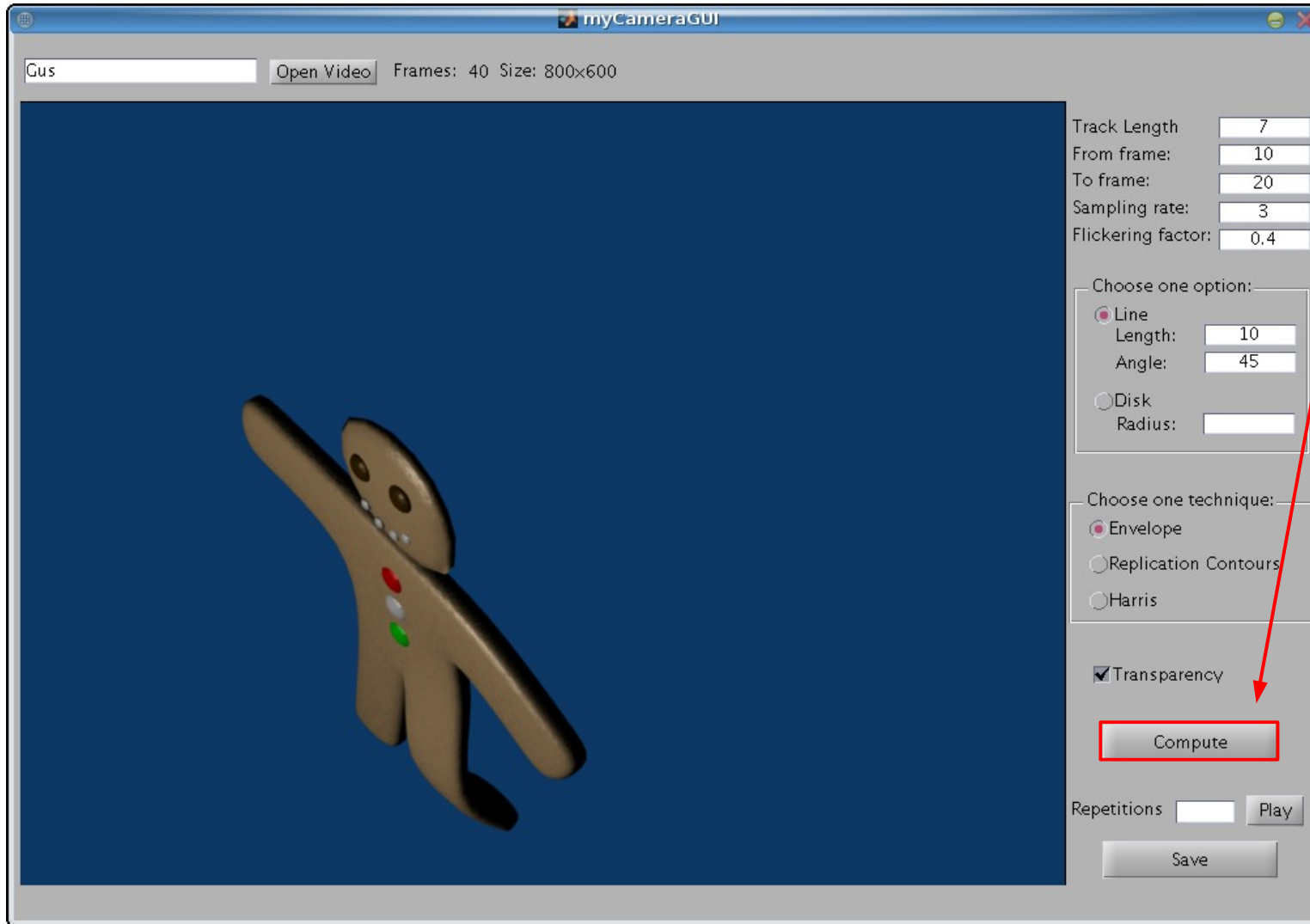
2. Replication contours: draws the track taking in consideration only the edges of the previous frames.

3. Harris: draws the track taking in consideration only the corners of the previous frames.

Transparency: this feature can be applied to each technique described above. It consists in applying an higher degree of transparency to older tracks.

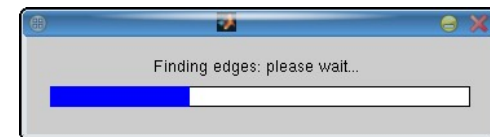
How to draw speed-lines

How to start the computation



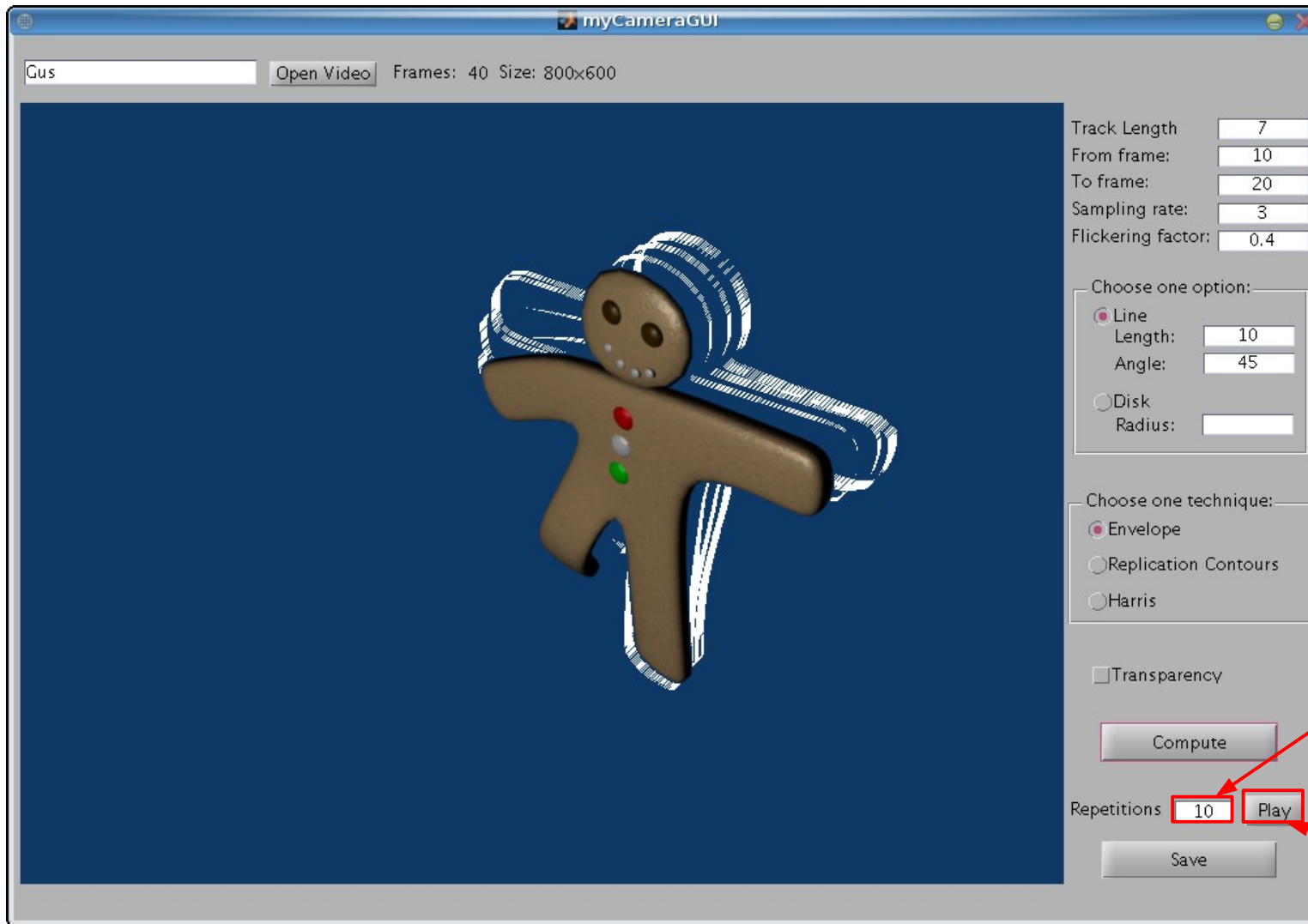
After setting a value for each option, press the “*Compute*” button to start the computation.

After clicking, a progress bar will appear with a message describing what the application is doing.



After the computation, the last frame of the result will appear in the main window. When the transparency is enabled, it is applied only to the last frame.

View results



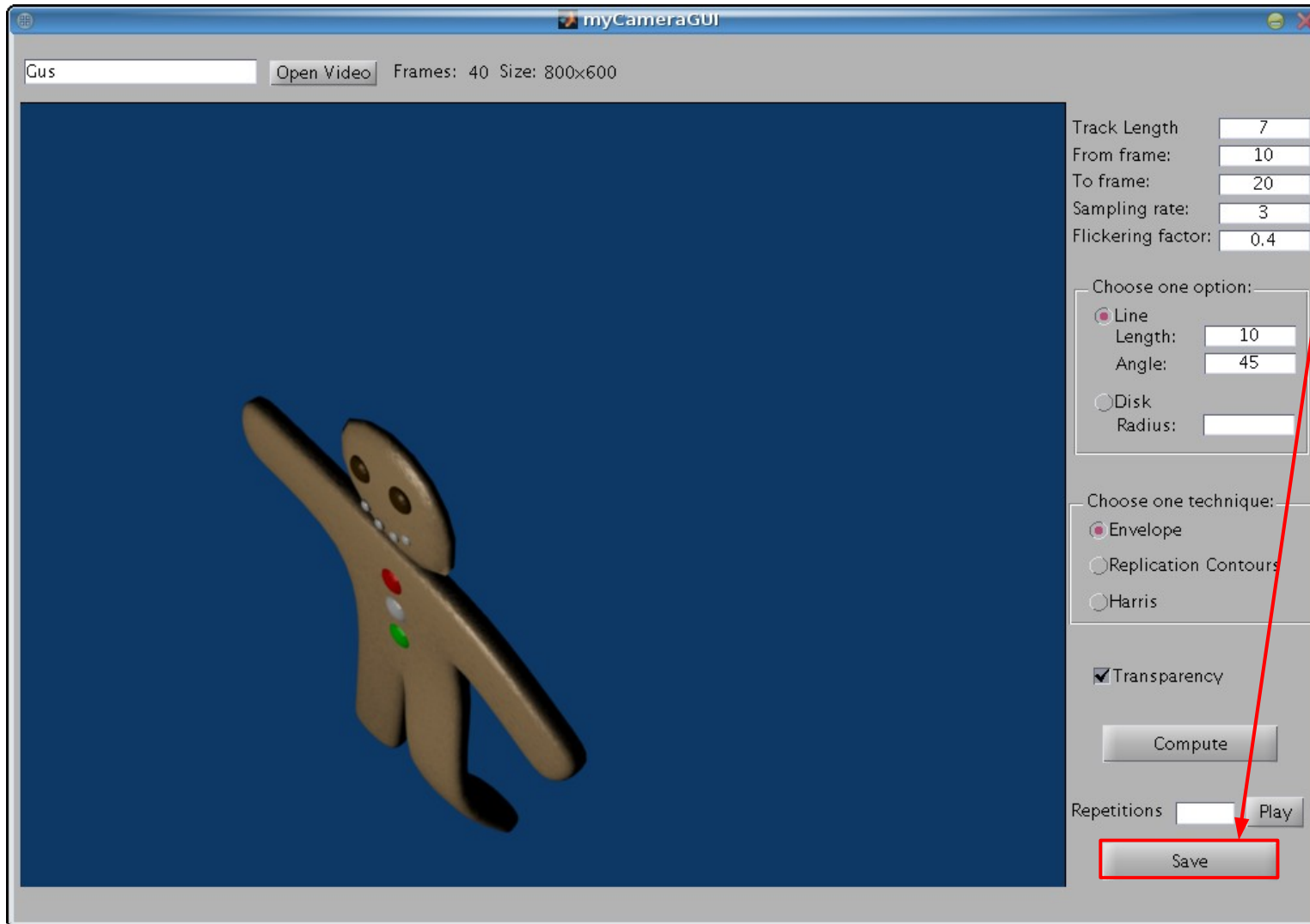
After the computation, it is possible to view the movie produced by the application before saving them.

In order to view results, it is sufficient to follow these two steps:

1. Specify how many times to play the output movie.
2. Press the "Play" button.

The output movie will be played in the main window after a little loading time.

Save results



After viewing the results it is possible to save them in output files:

- The last frame of the movie with the whole track for the movement.
- The whole movie composed of frames, each one with the track of the previous Track Length frames.

The files will be created in the matlab current directory and will have a name obtained combining the name of the movie and name of the technique.