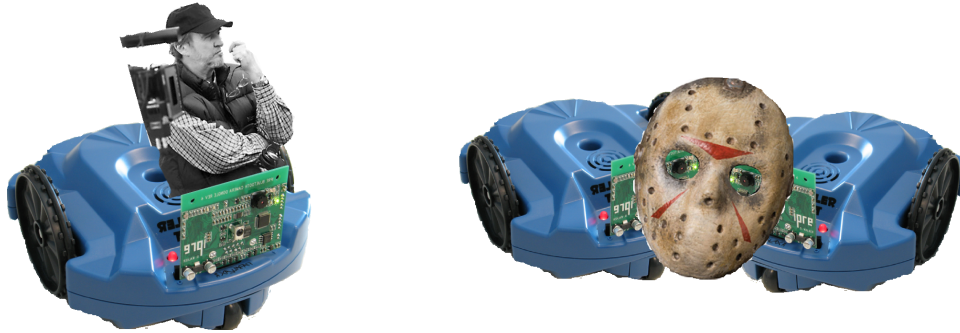


CMSC 143: Introduction to Object-Oriented Programming with Robots

Assignments 3 & 4 – Happy Robot Halloween!



Your robots will become the director, camera man, star actress, editor, and accompanying orchestra of the next big Halloween blockbuster. This group project (two or three people per group) will extend over two assignments and will be open-ended. Your robots will take a series of pictures using their cameras, then you will write python programs to edit and modify the film using various special effects. Finally, with the help of a robot (or computer) providing an accompanying soundtrack, you will play your film.

Special FX – Friday, November 6th

Implement 100 points worth of special effects. Some example effects:

- Seeing-Red (20 pts) – Make the scene have a red tint.
- Tempo-Change (20 pts) – Change the tempo of the scene in an interesting way.
- Robot-Zoom (20 pts) – Move the robot toward a scene to create a zoom effect.
- 360-view (20 pts) – Use the robot to get a 360° view of a scene.
- Dolly-Shot (20 pts) – Use one robot (or maybe two!) to pan across a scene.
- Robot-View (20 pts) – Invert the image based on a detected obstacle.
- Fade (40 pts) – Fade a scene to black.
- Overlay (40 pts) – Draw text or some graphic on top of a scene.
- Cross-Fade (50 pts) – Fading from one scene into another.
- Screen-Shake (50 pts) – Shake the image by moving it slightly.
- Split-Screen (50 pts) – Combine two shots (maybe from two robots!) into one frame.
- Green-Screen (50 pts) – Film using a green background, later replace it with some other image.
- Extended-Exposure (50 pts) – Combine multiple frames into one, giving the effect of extended exposure.
- Make Your Own (10 - 100 pts) – The point value will depend on the novelty and difficulty.

Each member should submit a team evaluation describing what each team member contributed: `cmssc143_specialfx_FIRSTNAME_LASTNAME.txt`. One person from the team should submit the python code `cmssc143_specialfx_N_teamname.py`, and a sample .gif file `cmssc143_specialfx_N_teamname.gif` for the N effects.

Your Movie – Monday, November 23th

Each member should submit a team evaluation `cmisc143_movie.FIRSTNAME_LASTNAME.txt`. One person from the team should submit the python code `cmisc143_movie_teamname.py`, and a .gif file (or some other movie format) `cmisc143_movie_teamname.gif` of the final movie.

- Filming (25 pts)
- Acting (25 pts)
- Editing (25 pts)
- Performance (25 pts)

Film Screening – Wednesday, November 25th

Film screenings and the robot academy awards – the Walters¹. Also, a short behind-the-scenes presentation (one-slide; 4 minutes) describing the most interesting aspects of your movie making process.

- The Walter for innovative robot camera work (5 extra credit pts).
- The Walter for outstanding robot performance (5 extra credit pts).
- The Walter for stellar special effects (5 extra credit pts).
- The Walter for superb screenplay (5 extra credit pts).
- The Walter for excellent accompaniment (5 extra credit pts).

¹Named after Grey Walter, a neurophysiologist who created some of the first autonomous robots