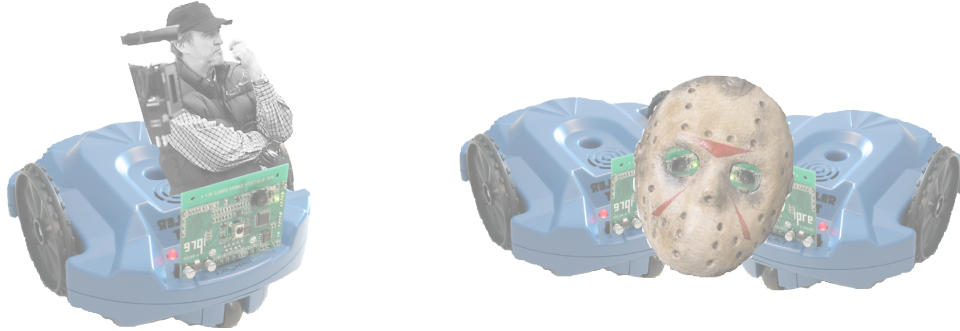


CMSC 143: Introduction to Object-Oriented Programming with Robots

Assignments 3 & 4 – Robot Shorts



Your robots will become the director, camera man, star actress, editor, and accompanying orchestra of the next big Annandale-on-Hudson blockbuster. This group project (two or three people per group) will extend over two assignments. 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, March 30th

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.
- Fade (30 pts) – Fade a scene to black.
- Overlay (30 pts) – Draw text or some graphic on top of a scene.
- Cross-Fade (40 pts) – Fading from one scene into another.
- Screen-Shake (40 pts) – Shake the image by moving it slightly.
- Split-Screen (40 pts) – Combine two shots (maybe from two robots!) into one frame.
- Green-Screen (40 pts) – Film using a green background, later replace it with some other image.
- 3D Image (40 pts) – Use multiple images to create a red/blue anaglyph image.
- Extended-Exposure (40 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_NAME.txt**. One person from the team should submit the python code **cmssc143_specialfx_teamname.py** and sample .jpg file(s) for the effects.

Your Movie — Monday, April 16th

Each member should submit a team evaluation `cmssc143_movie_NAME.txt`. One person from the team should submit the python code `cmssc143_movie_teamname.py`, a copy of your movie either as a .mov, .gif, or some other movie format `cmssc143_movie_teamname.mov`, and a behind-the-scenes powerpoint presentation `cmssc143_movie_teamname.ppt`. The one-slide powerpoint should address the most interesting and challenging aspects of the project. You can use the program *VirtualDub* (installed on the lab computers) to convert a series of JPEG images to an AVI movie file. We'll go over this process during lab.

Film Screening — Monday, April 16th

Film screenings and the robot academy awards — the Walters¹. During the film screening you will also present the 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.
- The Walter for outstanding robot performance.
- The Walter for stellar special effects.
- The Walter for superb screenplay.

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