
Character, Place and Simulation:

Archive (Website + PDF backup)

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Rationale

My studio project in this semester is a 3D animation. It is expected to finish the pre-production and half of the piece by the end of this semester. There are a lot of assets and element need to be done. To connect CPS to my studio project, I made a list of what are the possible stuffs (assets, footage, elements) that are required. For each CPS class, I tend to design my idea that might helps or possible to reuse/refine in my studio. For CPS, I would like to explore different possibility of 3D animation or 3D elements. These exercises will either provide inspiration to my studio idea or be a technical solution preparation for my studio project.

Archive Website

<https://nslensun.wixsite.com/cpsblog>

The content of this PDF is the same as the archive website. This PDF is a backup just in case if the website is unavailable for some reason.

Week 1

Theme:

Visualisation and Compositing

Method:

Shoot a footage(video) that has dynamic sound (such as tram ring, knock, door lock sound) using smartphone and then composite 3D VFX based on the sound into the video.

Context:

interactive whirlpools inside National Gallery of Victoria

<https://www.youtube.com/watch?v=xHrtcpi6JqM>

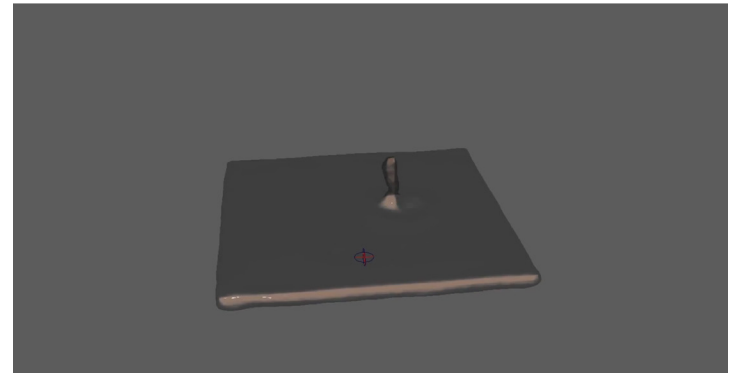
I went to NGV a few month ago and seen this. This projection field interacts with visitors while they are moving. Inspired by this, I want to visualize sound with VFX and build relationship with the footage to create similar effect as the NGV interactive whirlpool.

Response:

A footage composited with VFX that associates with sound in the video. Will upload to MAGI website. The idea of this experiment is to visualize the dropping basketball sound using 3D VFX. The further idea is to composite the rendered liquid FX on to the basketball footage to create a sequence of the student playing basketball on the water. The work hasn't been fully finished yet due to the time limit in class. Expected to be completed in spare time.

Magisite Link:

<http://magistudio.net/work/cps-week-1-visualisation-and-compositing>



Week 2

Theme:

Experiment on tools (Tinker)

Method:

Maya will be the main creativity tool for this week. Dynamic simulation and field forces will be explored in this experiment.

Context:

Flying Paper Simulation

https://www.youtube.com/watch?v=fpLBbkLFG_o

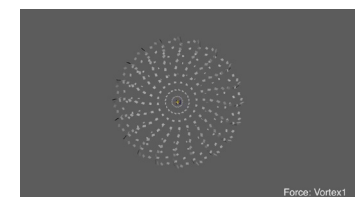
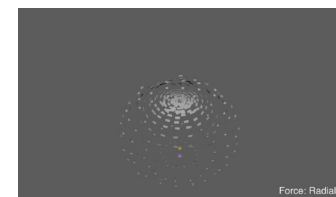
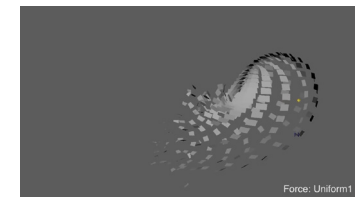
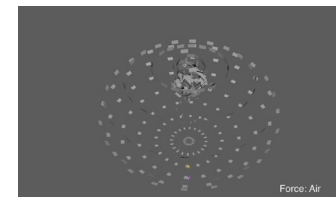
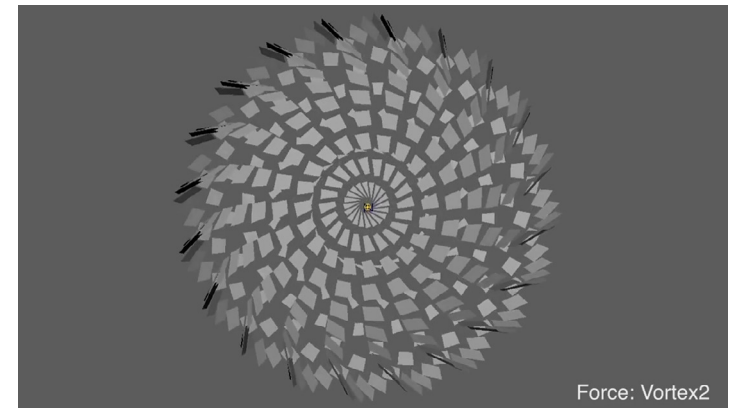
Flying sheet is a very common element in many films. 3D tools offers flexibility and powerful control to achieve the desired result.

Response:

A series of experiment with sets of simulation parameter and force type will be conducted to generate results, which will be exported to video files and then upload to MAGI website. This experiment aims to test, learn and understand the parameters and different type of forces that could affect the result of dynamic simulation. This will be a valuable reference for my studio production in this semester.

Magisite Link:

<http://magistudio.net/work/cps-week-2-experiment-on-tools-tinker>



Week 3

Theme:

'Object'

Method:

Maya Fluid will be used for generating fire. After adjusting various attributes, the fire will be constrained to a circle animation. This will then be rendered and output to mov file.

Context:

Fire FX Reel

<https://www.youtube.com/watch?v=asvrwz3tztg>

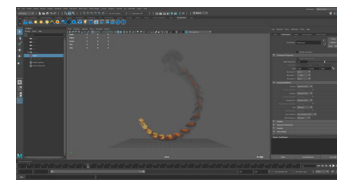
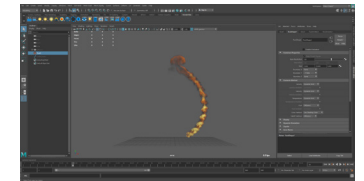
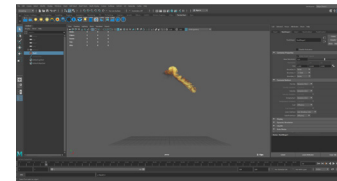
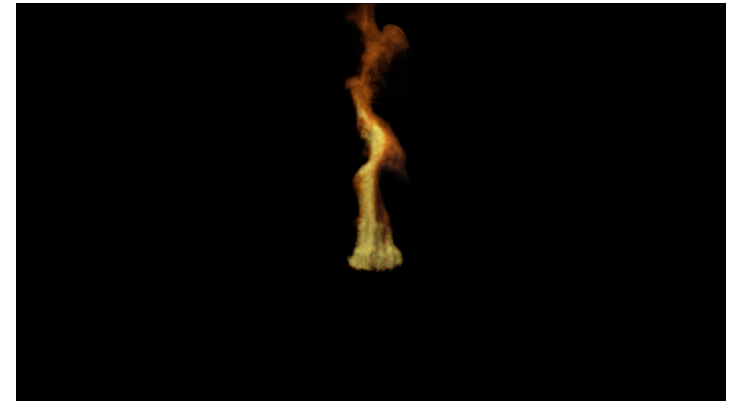
A lot of Hollywood adventure feature films have fire element. Nowadays the fire was created digitally due to the flexibility of CG technology. This week I am going to practise the tool for creating fire.

Response:

To simulate a fire magic, Maya Fluid is the key tool to create a fire. There are a lot of steps before getting a correct looking fire. After that, the fire container will be rotate along a circle path to create the 'fire magic' effects. To get a better result, the scene need to be rendered and outputted to movie file. Due to the heavy calculation, I set a relatively low resolution for the effect.

Magisite Link:

<http://magistudio.net/work/cps-week-3-object>



Week 4

Theme:

AR in Place

Method:

After Effects will be the main tool for creation this week, assisted by Photoshop for image editing.

Context:

Sony Xperia Z3 Camera - AR Effects

<https://www.youtube.com/watch?v=SY0lyuTGSzs>

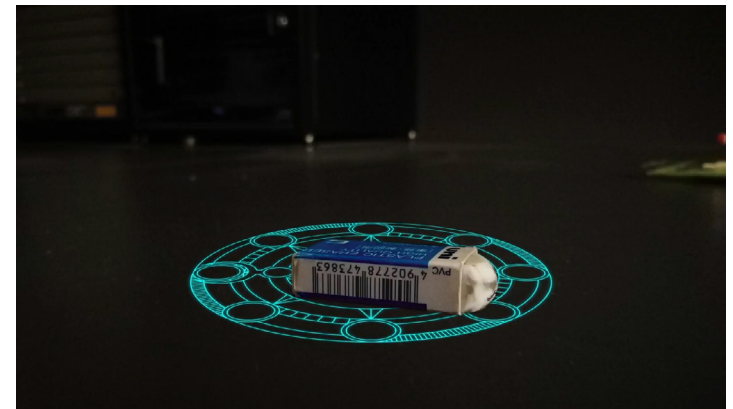
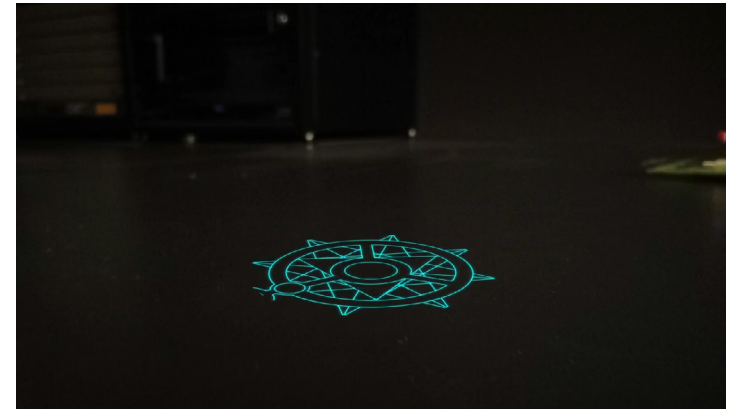
The camera app on my old phone has a plug-in called AR camera. It generates objects on the photo you shoot. However the app only has very limited choices of AR object. Also it doesn't recognize the scene. This exercise explores possible forms of AR app and ways to improve user experience.

Response:

A short motion graphic animation will be created in AE to and then will be composited into a photo (footage). This exercise is to demonstrate the possible way to play AR. In this example, an animated magic circle appears, and then the particles gather together, finally makes an eraser.

Magisite Link:

<http://magistudio.net/work/cps-week-4-ar-in-place>



Week 5

Theme:

Object Adventure - Go sightseeing and dance

Method:

Maya will be the main tool for this project. A bottle will be modelled, textured in Maya and rendered using Renderman. Animation will be done in Maya and output a playblast movie file.

Context:

This is a brainstorming project as well as an experiment on Renderman's global illumination with environment map. What would happen if a bottle leaves home and goes outside and have fun? How would a bottle act as a character? These are the questions I am going to answer in this short project.

I didn't find any related works on the internet. I found a tutorial which is helpful to my exercise:

Renderman 21 PxrDome & Day Light Tutorial

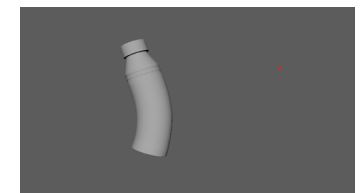
<https://www.youtube.com/watch?v=oidvnpQdNh0>

Response:

A bottle of water will be modelled and then applied a transparent texture. By adjusting the attributes of the texture, the bottle will have the thickness and feel of a bottle. After that, an HDR background will be used as the 'stage' for the bottle. The animation will be a few seconds of the bottle dancing in front of the scene. An animatic and a few rendered images will be the submission material.

Magisite Link:

<http://magistudio.net/work/apd-week-5-object-adventure>



Week 7 Moodboard

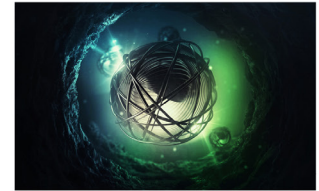
Elements



Techniques



Colors



Week 8

Theme:

Character, Place and Events

Method:

The whole animation was done in Maya. A cube was created and then added with Pressure (nCloth). The float effect was achieved by a combination of gravity and air force. A sharp object was placed on the top to pierce the floating object. After that, air force parameter was reduced to let the object fall down under the force from gravity.

Context:

Maya nCloth Balloon

https://www.youtube.com/watch?v=lbvem_csAf8

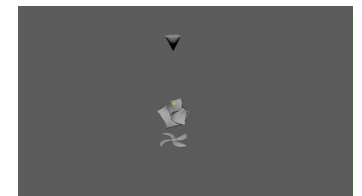
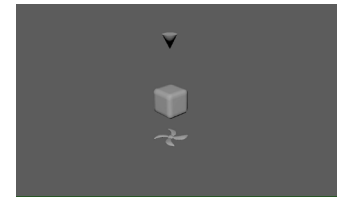
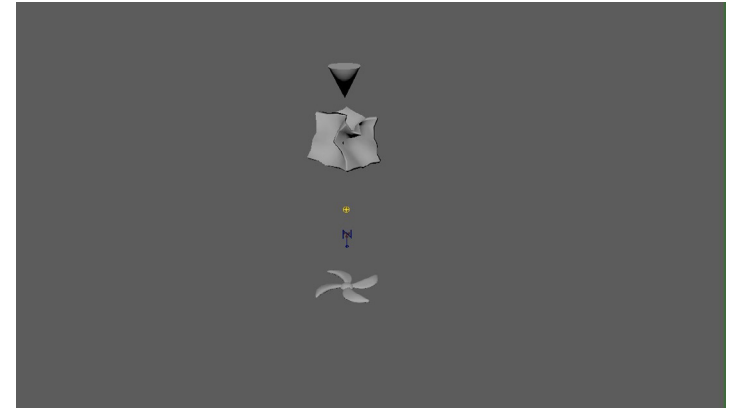
In this video, the collision of the balloons are calculated automatically. I would like to explore this simulation further and add an Event to it.

Response:

The idea of this exercise is to practise the procedure of making an short animation using a combination of forces. What audience sees is a cube inflates, float and then being pierced. Behind the screen, the making of this animation is actually a combination of tricks. When the cube is inflated with air, it does not float on its own. Although the simulation system could finish the calculation related to physics, we still need to tell the program the relationship between object and field and play the tricks manually to achieve the result we what.

Magisite Link:

<http://magistudio.net/work/cps-week-8-character-place-and-events-1>



Week 9

Theme:

Character and Time

Method:

This task was done using Maya. A sand clock was modelled and shatter by bullet afterwards. For this animation, to achieve the effect of bullet time, the simulation was set to a high frame rate, which is 120 fps. This gives me more in-between frames to do the post-production in After Effects. The animation will be played at normal speed until the bullet hits the sand clock. Playback speed will then slow down 2 times, generating a slow-motion effect.

Context:

The Matrix - Bullet time

<https://youtu.be/KNrSNcaYiZg?t=122>

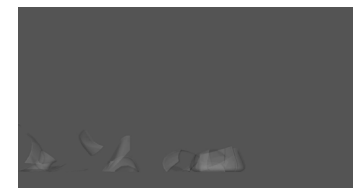
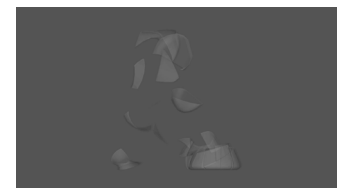
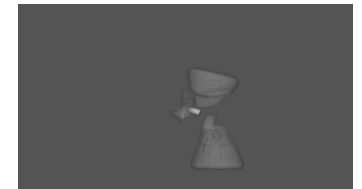
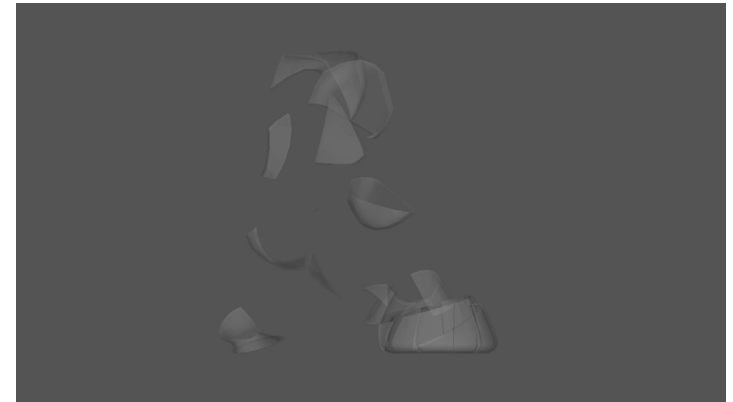
The scene was so astonishing back in 1999 when the movie was released. This kind of 'time' filming technique has been impacting so much movies afterwards.

Response:

Timing is important in media creation. It affects the visual experience, story telling and the pace of the work. A short sequence of slow-motion in an animation could enhance audience's attention of a specific plot or action. Slow-motion provides a much detailed visual information to the audience.

Magisite Link:

<http://magistudio.net/work/cps-week-9-character-and-time>



Week 10

Theme:

Forces

1. Dry object.
2. inhale/exhale
3. character moves follow music

Method:

This task was done using Maya. A Super Mario game field was modelled. In this animation, the character encountered barriers and met a item block. The block was too high for it to reach. The character inhaled, exhaled and jumped and finally reached the block. Out of its expectation, the block activated a rocket and killed it. The animation frame rate is set to 60 fps to give some room for post-production. The moment when the character get killed is slowed down 2 times.

Context:

Incredible Slow Mo Videos

https://www.youtube.com/watch?v=pH-YB_9iEMs

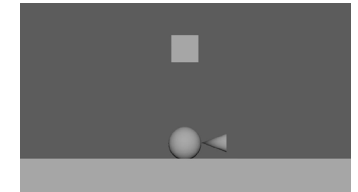
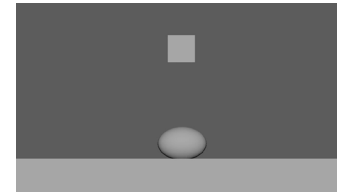
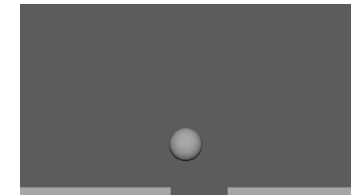
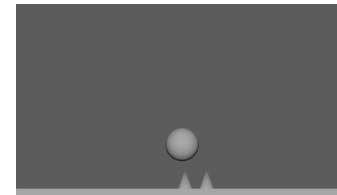
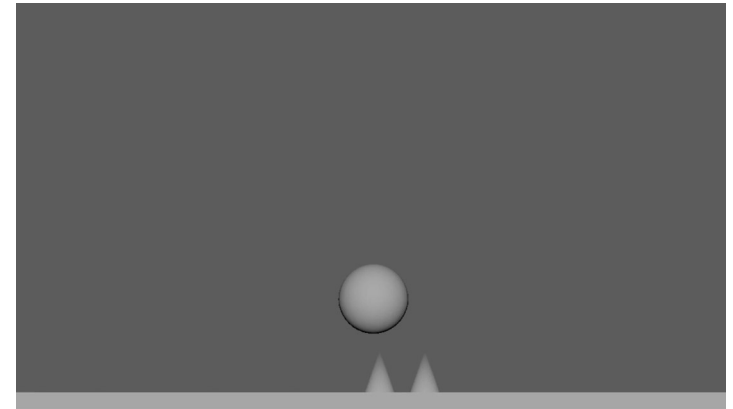
These videos show how slow motion allows viewer to see things that normally could not observe with human eyes in real time. I quite like the moment when things slow down.

Response:

Similar to last week, this exercise explores slow motion as well, but in a different way. As this small project involves with character and music, it is important to carefully consider the proper settings to be used. A high frame rate of up to 240 fps is suitable for slow motion simulation without character as there aren't additional cost for that. Frame rate of 240 fps or 120 fps for character animation will make it difficult for calculating the frames of action. Therefore, I set the frame rate to 60 fps and this is enough for doing the slow motion for mid-speed moving object. This is also a good opportunity for me to explore the timing techniques, which helps my studio project.

Magisite Link:

<http://magistudio.net/work/cps-week-10-force-3>



Week 11

Theme:

Stillness - How do things end?

Method:

This exercise was done in Maya and rendered with RenderMan. A sphere was modelled and textured with a glass material. I download a HDRI exr image sequence of time lapse on the internet. This image sequence was applied to another sphere which act as the sky. The glass sphere was placed on a plane. It will reflect the sky pattern - the HDRI sequence and create a time lapse effect. Final animation was rendered with RenderMan and then composed in After Effect.

Context:

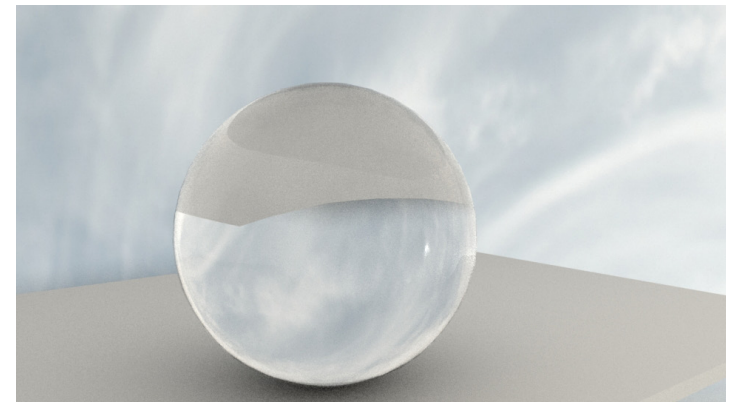
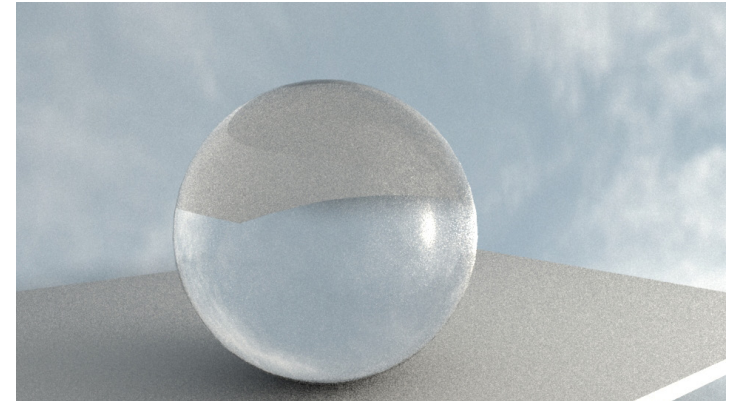
Time lapse video of outer bands of Hurricane Michael
<https://www.youtube.com/watch?v=1S0YCXWauxE>
I quite like the idea of this video. The camera is placed in a fixed position and capture the changing image of the environment. This footage was taken in the evening when sunset was about to happen, which represents the end of a daytime. This gives me inspiration to create an time lapse animation in an-other perspective.

Response:

Opposite to last week, this exercise 'accelerate' time, enhancing the changes of time. Viewers are able to observe time changes in a larger scale. Time lapse shot is very common in media works. It gives an idea of time has passed, representing a larger progress of the story. This exercise helps me to gain a much more comprehensive understanding of time and also provide a possible method to my studio to represent time visually.

Magisite Link:

<http://magistudio.net/work/cps-week-11-stillness-6>



Summary

This course has helped my studio project in terms of timing and lighting.

My studio project has a strong focus on abstraction. This is achieved via abstract model and lighting. Inspired by the CPS exercise on week 5 and 11, I applied reflective material on the models and animated lighting to produce a dynamic reflection on a object surface.

Also benefited from the practise on animation frame rate on week 9 and 10, I used double frame rate on the shots that needs extra room for doing the slow motion effect in post production. I am able to slow down the animation speed without causing any lag issue. For example, if I output the animation at 24 fps and I reduce the speed by 2x, the number of frames in each second will drop from 24 to 12, which will significantly reduces the smoothness of the animation. However, if outputted 48 fps and speed reduced by 2x, the frame number will drop from 48 fps to 24 fps, which is still sufficient for a creating a smooth animation.

Some exercises aren't directly contribute to my studio project as some of them are considered to be unsuitable for studio production timeframe. For example, the simulation on week 1-3 gives an initial idea of what these effect will look like under a 3-hour tweaking. It is time-consuming to both tweak the parameter and output the result (heavy calculation).

To conclude, CPS gives me the opportunity to test and explore new stuffs that might be helpful to my studio project and practise. My studio project was completed as expected largely thanks to the techniques, inspiration and skills that CPS brings.