Final Production Report

Team 5 – FM 5.0
http://www.sfu.ca/~janicen/iat343teamfm5.0/weekfinal.html

Aries Li (301166828)– http://www.sfu.ca/~zla52/iat343
Yuki Li (301107443) – http://www.sfu.ca/~yql2/iat343
Janice Ng (301141803) – http://www.sfu.ca/~janicen/iat343
Grace Tong (301117696) – http://www.sfu.ca/~gwtong/iat343
Zachary Wang (301143973) – http://www.sfu.ca/~zacharyw/iat343

Instructor – Steve DiPaola
TA – Kyungjae Lee
IAT 343 – E100
April 14, 2014

Roles

Aries Li:
Story, 3D Modelling, Sound

Yuki Li:
Story, Storyboard, Visual Design, Texturing

Janice Ng:
Director, Producer, Story, Screenplay

Grace Tong:
Story, Storyboard, Visual Design, 2D parts

Zachary Wang:
Story, Rigger, Animator

Story

The first idea of our story consists of combining 2D and 3D animation. As we went through various iterations, we eventually drew up a story about a robot named Otis.

Originally our story started off with Otis losing his job at the oil production factory in the 2D world. After realizing he was laid off, he decides to drink his sorrows away at a nearby oil bar. However, after a couple of drinks he becomes rowdy and the bartender kicks him out. Somehow, Otis gets kicked so hard and ends up landing into the 3D world. After regaining consciousness, he is terrified about the new world but quickly adapts and manages to find a new job as a wine connoisseur.

After an extensive amount of revisions from the feedbacks provided, we modified major portions of the narrative. In our new and final version of the story, it is 15 years after the war between the 2D and the 3D world and Otis is currently lost in the 2D world. One day, while trying to find the rest of his army he comes across a blocked off area. Since he is in the 2D world and in a 2D form, he cannot look sideways at the warning signs. As a result, he simply rolls over the warning signs and ends up falling down a deep hole. When he wakes up, he realizes he is back in the 3D world, but because so many years have passed everything looks different. Since it has been awhile of Otis being in his 3D form, he rediscovers the wonders of his new body. After he calms down, he goes off to explore and when he enters a building, he finds his army waiting there to welcome him home.

Research

To achieve a short animation based on the concept and the team's minimal skill sets in Maya, we have researched various techniques and applying them to meet our goal. For instance, Lynda.com provided an excellent source for beginners to familiarize with the animation software Maya.

The majority of research was focused on Set Key Driven Animation based on each team member's homework assignment since it was found that this method of animation was a lot more efficient and powerful in comparison to Keyframe Animation (which was also used in our short). The reason for such is that our short involves numerous movements from the characters' perspective and cameras' perspective. In the references below, it portrays a hand full of findings committed.

Furthermore, the team has also searched up Maya texturing methods of Non-Photorealistic Renderings such that our story requires the use of toon shader, as well as imitating a portion of realistic look. Hence, the textures shown in the references section below are minimalistic images of metal and concrete found from Google.

For lighting, we tried to get a deeper understanding of enhancing a cartoon animation where we found that it should map to our physical world. For instance, since the story happens over the course of a morning, directional light was used to provide a higher intensity of light and point lights were used to illuminate the streets and scene found on the street lamps. All of the lighting was created ourselves and were not obtained from other external resources.

In terms of rigging, it was necessary to understand skeleton based animation. The reason for such is that our character is a robot which only has bone-related structures in the arms, fingers and antenna, but not its core body and wheel-foots. Therefore, skinning (which we learned in labs) is only present to blend certain skeletal structures together so that it does not affect non-rigged components. Also, we noticed how to utilize inverse kinematic (based on lab exercises) on the arms to create a much more smooth movement flow for the protagonist, but had trouble shaping the rigging properly due to modelling issues. The use of inverse kinematic animation also greatly contributed towards the overall efficiency of the animating portion of the project.

To complete the short film sound plays a large role such that it enhances the experience for the audience to further understand the story. Therefore, all the voice acting were done by our team member Janice with the post production of a helium effect and that the background music and other sound effects were found from various sources as seen in the references section below.

Lastly, to improve on our basic components, we have watched several animation shorts such as mini movies from Despicable Me and clips from Frozen to view an understanding of the 12 Principles of Animation which was then applied to our short. For instance, the animation consists of anticipation, staging, follow-through and overlapping

actions, slow-in and slow-out, arc motion, secondary action, as well as exaggeration through the character's emotions and actions of gaining consciousness to running around due to his panic state and exploration segments. With our aesthetic approaches, the 12 principles help drive the realistic, yet comedic experience for the audience.

Challenges

Throughout this project we came across several major issues that we had to resolve. For one, we had difficulties with our naming conventions since each team member had their own naming style or simply did not name objects properly. This created problems down the road when our animator had to import all the different files from each group member and ended up having to rename everything. As a result, this affected the quality of rigging and animation. In terms of team coordination, we originally tried to have each group member work separately on their own respective parts, but we soon realized that this working style resulted in file and versioning issues (i.e. we had three different versions of the main character since some of them did not work as intended when we started texturing and rigging). To overcome this issue, we ended up meeting up as a group more often which greatly helped the efficiency of our file sharing. We also had numerous rendering issues where the Maya mental ray rendering process was extremely time consuming and ended up crashing Maya multiple times. We then solved this by playing around with the mental ray settings and even buying a new computer.

Reflection

We learned that in terms of naming convention, we will need to name things properly so that the project can be completed much more efficiently and quicker. We found that it is more efficient if you use rigid hierarchy animation. We also noticed that using the Set Key Driven was far more efficient than just keyframing each pose. Similarly, the use of inverse kinematic animation increased the efficiency and speed of animating character joint movements.

After completing this project, the team gained more insights of how an animation film production runs which allowed the team to understand the importance of teamwork and the requirement to become dedicated in their particular roles to prevent an outrage of production. Furthermore, each individual discovered various animation techniques and methods based on their respective tasks to improve the animation process. Additionally, over the course of generating an animation, we found that each component had to be created and given a life to for the display to occur which has raised our awareness. As a result of playing with the surface tools of Maya, as well as going deeper into ones that suits our project requirement, each team member also managed to familiarize themselves with the software and the domain of animation.

References

Maya Software Tutorials (used to familiarize ourselves with the program):
http://www.lynda.com/

Resources used to create Set Key Driven Animation:
https://www.youtube.com/watch?v=6X2DvG1Fl2E
https://www.youtube.com/watch?v=jQT5qCP5mv8
https://www.youtube.com/watch?v=jQT5qCP5mv8
https://www.youtube.com/watch?v=lpOG4Qz8LEo
https://www.youtube.com/watch?v=uwzlkveWexw
http://mayaspiral.blogspot.ca/2012/05/utilities-switching-objects-visibility.html
https://www.youtube.com/watch?feature=player_embedded&v=nRFhtmNrROI

Resources used in our sound design:
Platform Nine-And-Three-Quarters And The Journey To Hogwarts - John Williams
The Norwegian Ridgeback And A Change Of Season - John Williams
The Quidditch Match - John Williams
[Harry Potter and the Sorcerer's Stone (Original Motion Picture Soundtrack)]
Orgel - SHINee [Why So Serious?]
freesound.org
SFU Surrey sound library

Typeface used:
Hitchcock

Resources used for texturing:
http://galleryhip.com/metal-scratches-texture.html
http://www.wildtextures.com/free-textures/brick-wall-texture/
http://www.tuicool.com/articles/ERR7jy
http://www.123rf.com/photo_19549060_pink-paint-concrete-wall-background-or-texture.html
http://www.publicdomainpictures.net/view-image.php?image=38980&picture=beton-textura-fond-albastru&jazyk=RO
http://www.allmacwallpaper.com/mac-wallpaper/Texture-Stone/2646#.U0yzfOZdXdc
http://aegiandyad.deviantart.com/art/Bad-Galvanised-Iron-Sample-Texture-273425169
http://www.ezhez.us/image-after-textures-roof-texture-red-rooftile-tiles-rooftiles/
http://xiaba.shijue.me/stuff/4ce342094b7959c84b350000.html
http://jajasu.weebly.com/
https://www.flickr.com/photos/exothermic/4648027117/in/set-72157624043602739
http://www.colourbox.com/image/red-tiled-roof-seamless-background-texture-pattern-for-continuous-replicate-image-2309907?ver=b&utm_expid=22365066-34.fcazlHfCSC-Yd0O3uzsCHQ.1&utm_referrer=http%3A%2F%2F
http://www.colourbox.com%2Fimage%2Fseamlessly-wall-pattern-background-for-continuous-replicate-see-more-seamless-image-1532331%3Fver%3Db

http://roofingfourseasons.goodplumbinginc.com/wp-content/gallery/roof/jjgreenroofcopper-roof-texture.jpg&imgrefurl=http://www.homeschannel.net/welcome-to-roofing-four-seasons.html&h=1200&w=1600&tbnid=02vU9hpXK2A3qM&zoom=1&tbnh=194&tbnw=259&usg=__rVLa3AFaCgk9sWOBPtJpDwZoLTM=