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A Study of Animating to Music

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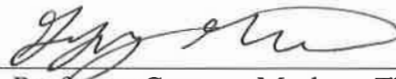
A Study of Animating to Music

By

Brianna Edmonds

An Undergraduate Thesis Submitted in Partial Fulfillment
of the Requirements for the
Fine and Performing Arts Honors Scholars Program
Honors College
East Tennessee State University

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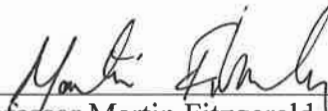Brianna Edmonds   Date

_____   5-1-19
Professor Gregory Marlow, Thesis Mentor   Date

_____   5/2/19
Professor Martin Fitzgerald, Reader   Date

_____   5/1/19
Dr. Scott Contreras-Koterbay, Reader   Date

Introduction

I have always had an interest in musicals. I enjoy the way storytelling can happen through a single musical segment. I have always been interested in how music can set the tone in an instant. Because, of this I decided my thesis would be more of a conceptual one. My vision for my thesis project was to create a sequence that is animated to music and will tell a story through a sequence that is set to music.

Conceptualization

My concept for my animation was heavily inspired by food. I am someone with a strong connection to food. For me, food is something that can be comforting. I find that food can be a good way to connect with others. My favorite memories with my family are times where we all get together to eat for holidays or cookouts for family reunions. Going out to eat with friends is one of my favorite things to do. Even with all my good opinions of food, I know that too much food, or unhealthy food can do more harm than good. This is the reason people will leave behind unhealthy eating habits for healthier food. When people drop their unhealthy eating habits they are effectively dropping the unhealthy food as well. I imagined that if the unhealthy food had feelings it may feel sad or angry about being replaced with the healthy food. From that thought came the inspiration for my idea. I wanted to create a story where that unhealthy food fights back after being thrown out. My goal was to make a story that my audience could easily relate to. I wanted to entertain through a story about junk food.

My original plan for the animation was to create a musical sequence with singing. I ended up scaling the concept down to a thriller trailer. This way I would still be able to animate to music and get my concept across with less moving parts. My story for my trailer was to show

what would happen if someone went on a diet for their new year's resolution and their junk food fights back. It would be edited in a typical thriller style to really set the tone. After finalizing my concept, I moved on to the planning process.

Planning

During the planning phase, I decided on what characters I wanted and how I wanted them to appear. I knew that since I was animating this project in 3D, I had to create designs that would be visually appealing in 3D software. I also created designs that would be simple for me to model and rig in Maya. I decided that I would feature a few food items that are the most recognizable as junk food. I chose to feature a hamburger, fries, ice cream, and pizza. I felt like these foods are the most relatable to other people, and each food is distinctly different in shape. Additionally, these foods can all be modeled in 3D space with simple shapes. This fact would make modeling these foods a quicker process for me. I drew up some sketches of the foods and how they might look.

After finalizing the food character designs, I shifted my focus to the female character. Of course, since the story comes from a bit of a personal place, I decided to model the character closely to me. I felt that it made the most sense for the female character should have a curvy body type. With all of the character designs finalized, I moved on to the modeling and rigging of the characters.

Modeling

The first characters that I modeled were the foods. I felt that since the food designs can be made with simple shapes, that I could get those completed first before moving on to modeling a human. I made all of the food models in Autodesk Maya with polygon shapes. After completing

the food models, I began creating the female character model. I began by sculpting a character in Zbrush.

Though I really liked my character design I had complications with my Zbrush model that were holding up my process. I decided to scrap my model and edit a completed model instead. I decided to use the Luna rig created by Adrien Dendra. This rig is free for use by students for demo reels and personal projects.

I made changes to the Luna's body type by scaling up certain curves. I scaled curves on her thighs, hips, arms, waist, and chest. I scaled her nose and lips as well. My goal was to make the character as different from the original as I could, so that I could have a unique look for my animation. The result was functional, and the process was completed in a short time.

Rigging

For my food rigs, I used nurbs curves for the controls. Each of my foods had different requirements for their movements so I had to take that into account. I wanted the characters to each move uniquely. The hamburger jumps and separates as it does. The fries shift within their carton as it waddles side to side. The ice cream jumps as well. The different movement will further serve to add character to each model and give them personality. Additionally, when the models are closing in on the main character, different movement patterns can add a creepy element as well that can further set the tone of my animation.

I wanted the hamburger character to be able to have sections that could separate. I gave each layer of the burger its own bone set.
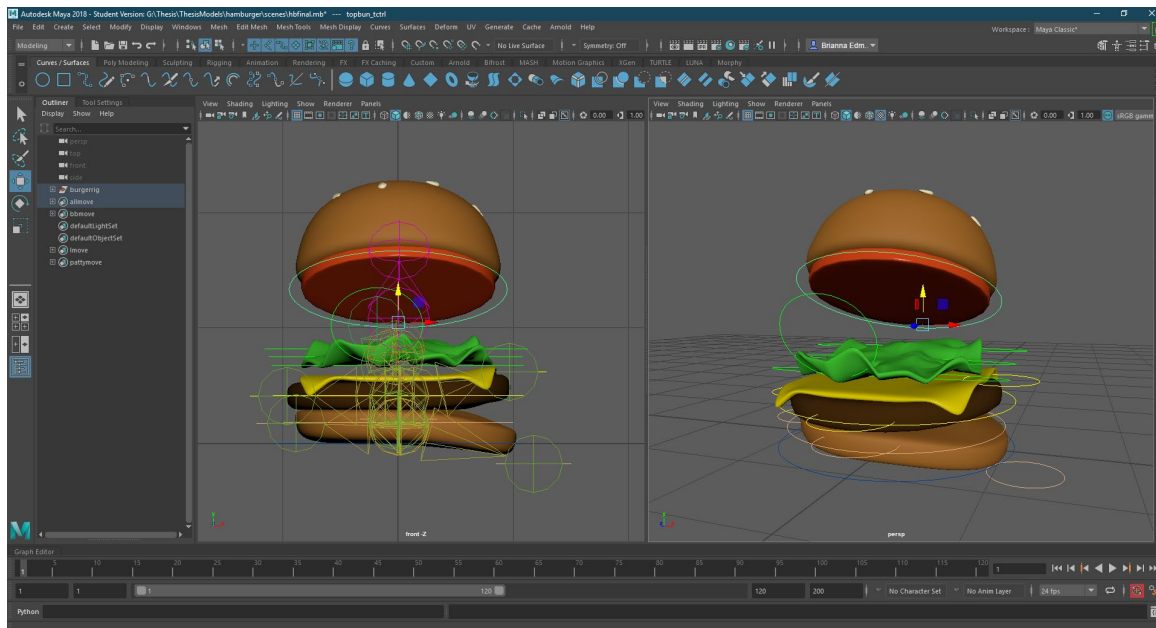
With this rig I would be able to animate the burger separating and add more character to the movement.
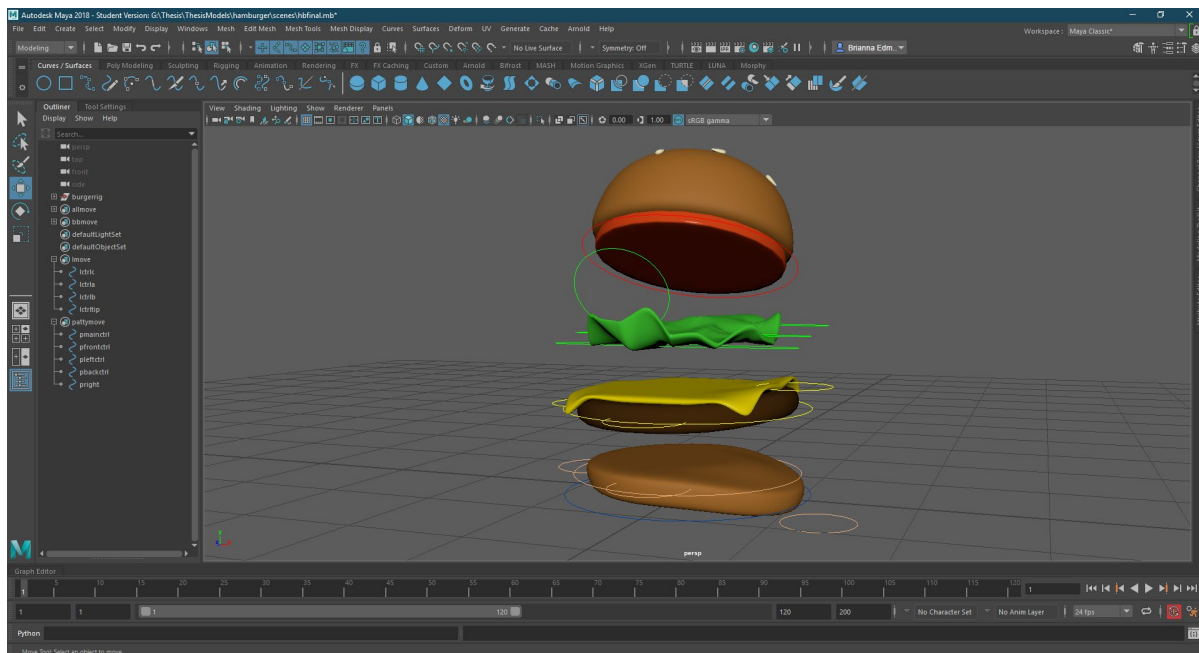

For the ice cream I gave it a standard bone set. The thing that is unique about the ice cream rig is the inclusion of a blend shape. This blend shape allows me to change the mouth

shape of the model. I included a neutral, open, and smiling face shape. I decided to include a

mouth to make the character more distinct from others. The other characters have no mouth

because they are more solid, but the ice cream is more of a fluid substance.
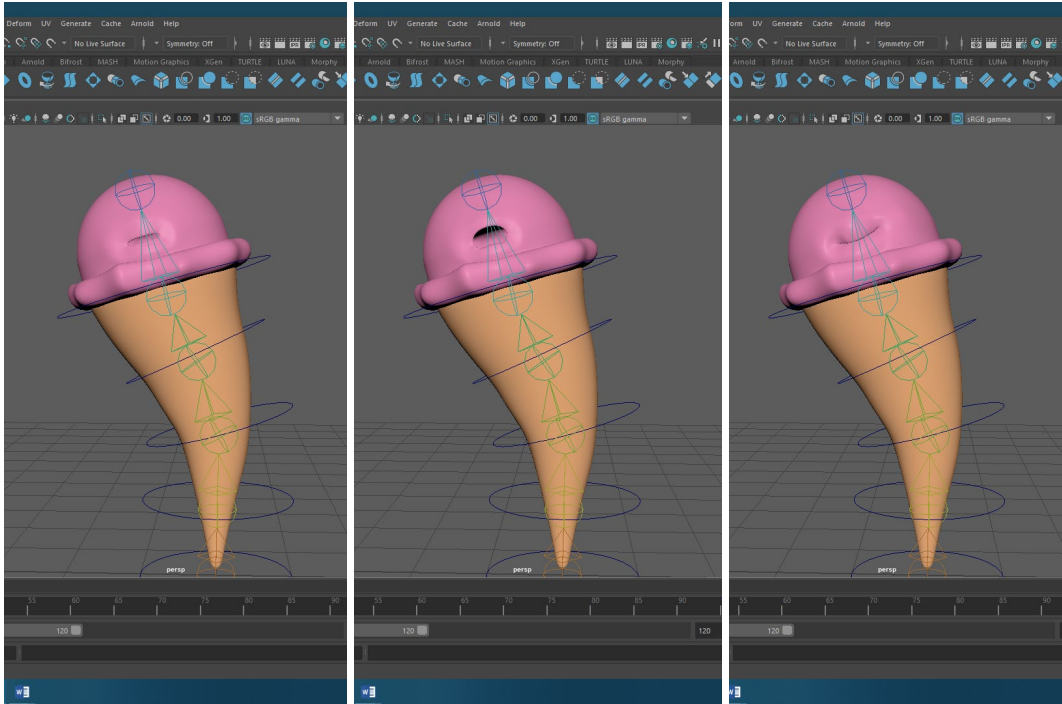
Since the ice cream character has no speaking parts, I decided that three mouth shapes

would enable me to create all the expressions I needed.

The pizza originally included pepperoni. After rigging the model, the pepperonis were

causing issues by clipping into the cheese part of the model.
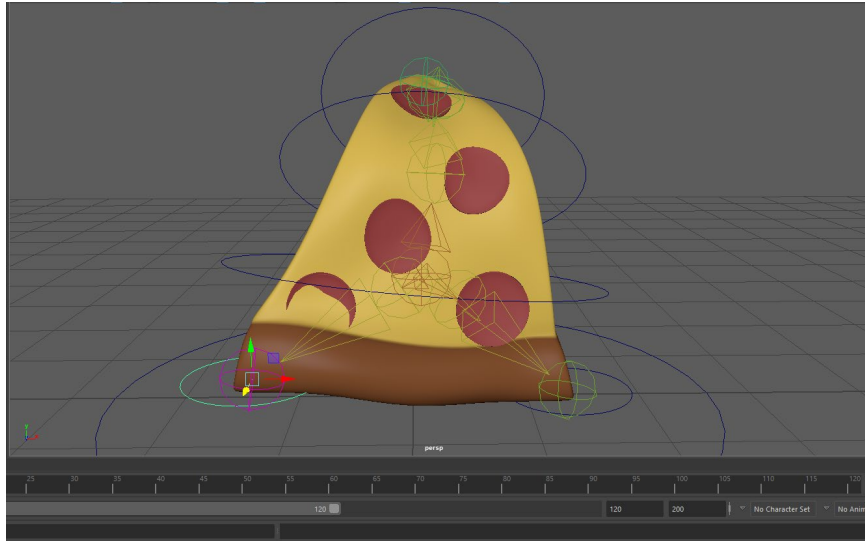
I decided to remove the pepperoni and make the model a cheese pizza to save time.
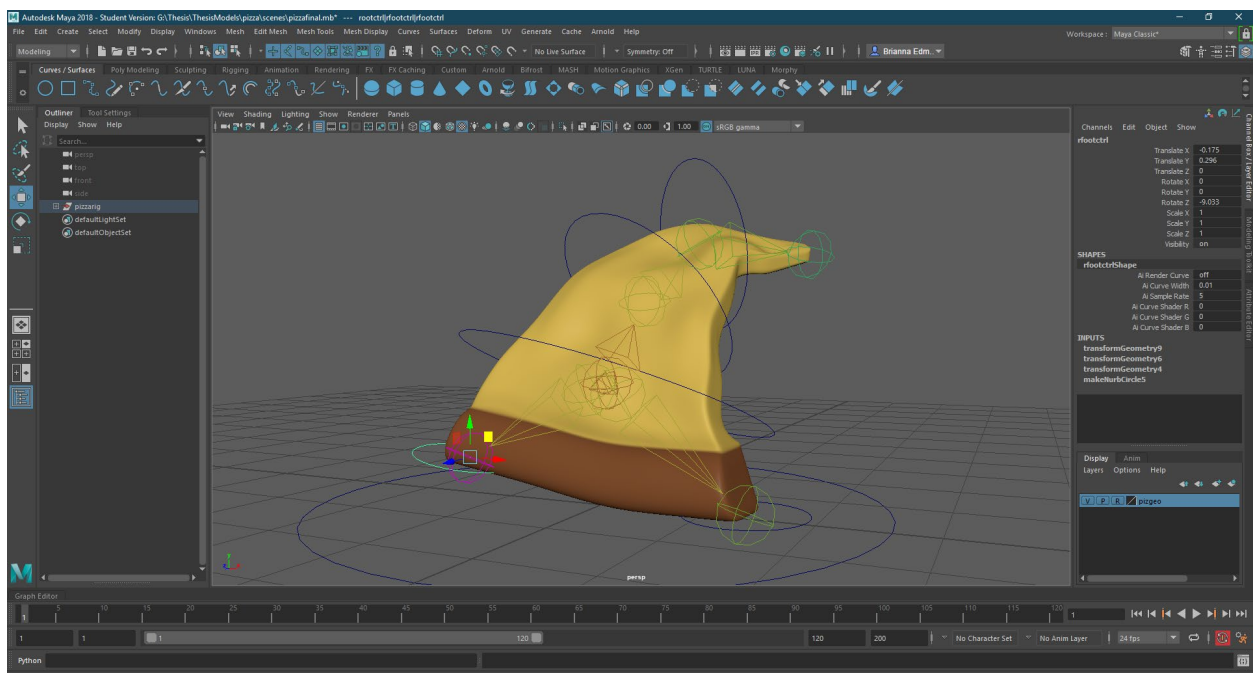
The rig is unique because it is the only one that has a hip and leg bone set.

The fry rig is done with a simple parent constraint. I grouped all of the individual fries and then parented that group to the carton. This way all the fries would move with the carton and I could still set keys for the individual fries' movement to change.
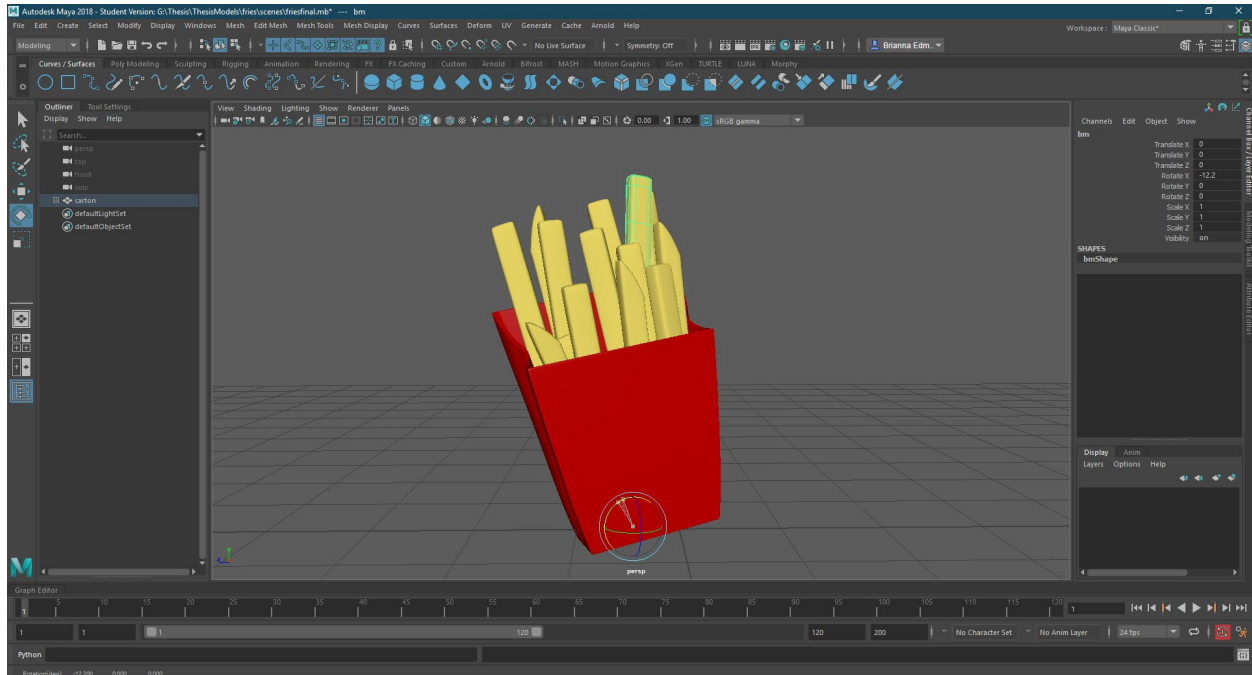
With the rigs complete I moved on to modeling the environment.
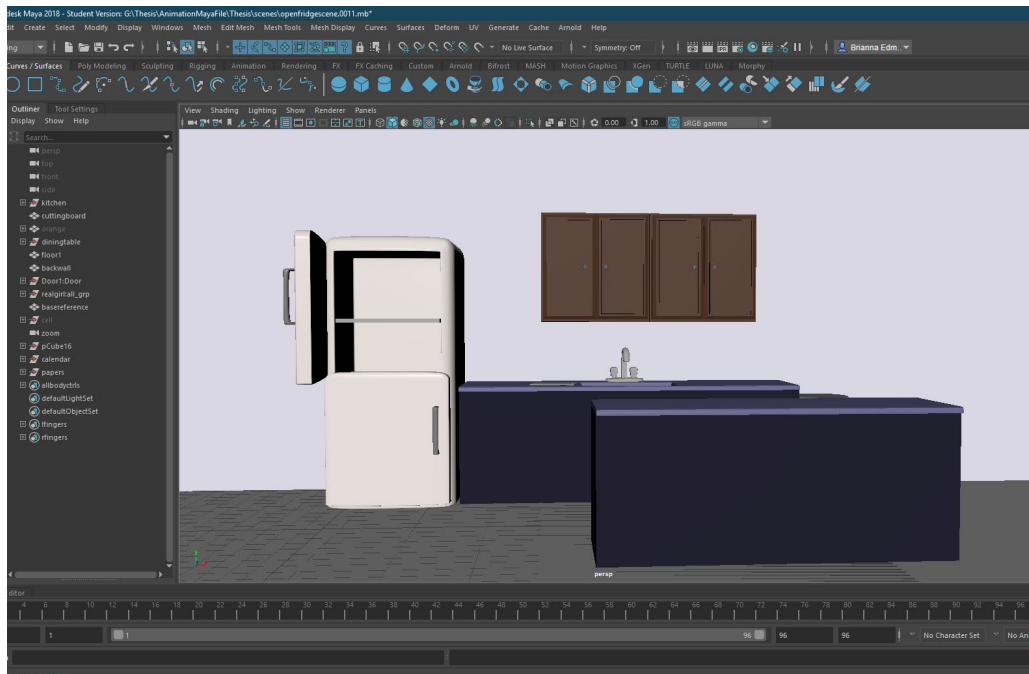
Environment Modeling

I wanted the sequence to take place within the main characters house and stay in the kitchen. I took inspiration from the kitchenette in my dorm and my kitchen from home. I essentially mixed the two layouts together and created the layout for the kitchen in the scene.

I created the kitchen first with simple geometric shapes and textured them.

For the living room I imported a resource from the Animation Starter Pack v2. This pack

includes many untextured scene files for student use. I chose the one that included a couch and

television, textured the objects, and placed them in the scene.
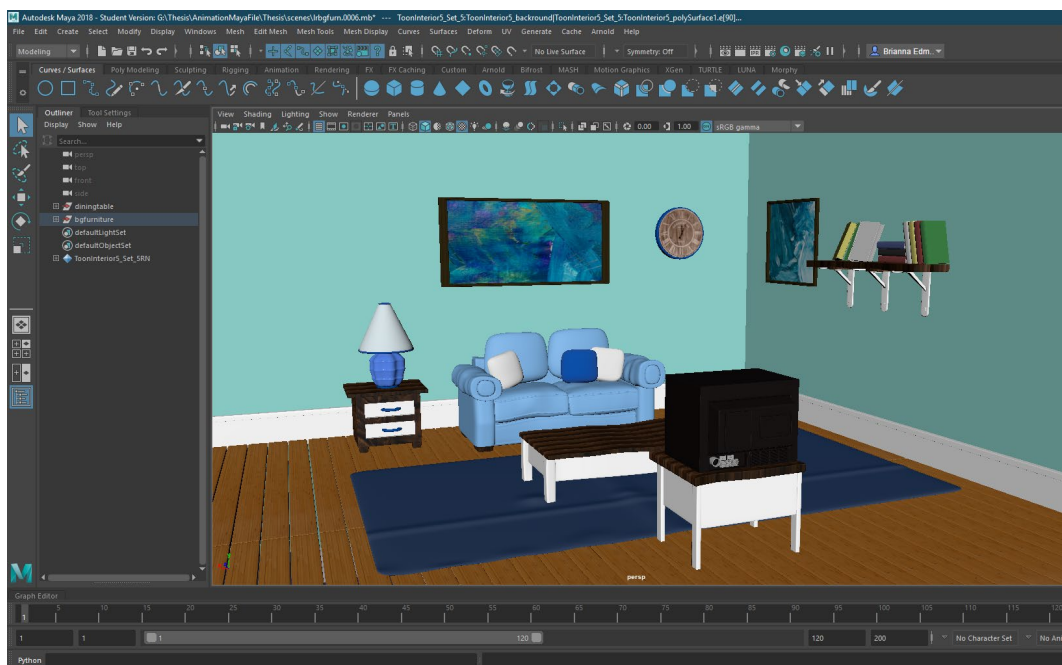
I imported a front door from the Animation Start Pack v1 for the main character to enter from and textured it. Then the scene was complete and ready for animation. Before I could prepare the animation, I needed to find audio to animate to.

Audio

I used the audio "It's Coming" by David Fesliyan. In the description on David's website it even says the audio would be perfect for a trailer. As soon as I heard it, I knew it would be perfect. It starts slow and builds up which is exactly the tone I was looking for. The track was a bit long for my purposes, so I edited it down to a little over a minute long. After finalizing the audio track I was ready to create the animatic. The audio is important because it shaped how I animated everything. I based all of my shots and timing on the audio.

Animatic

The animatic is the part of the animation process where creative decisions are made for the timing and pose of the character. For my piece the most important part was to imitate thriller trailers and have scenes that could be scary for the audience. I knew I had to include scenes that are most associated with thrillers. I knew I wanted the trailer to start of slow and escalate along with my music.

The first few shots are slow. I have a pan over from the living room to the door where the main character enters. The character brings in groceries and puts them away. During this shot I wanted to establish the setting and context. I have a calendar on the fridge that shows the date January 1st. This will remind viewers of new year's resolutions and further help them put together what is going on.

After establishing context, I show the junk food in the trash. In all thrillers anything thrown away will eventually return so I make sure to hold on the trash so that viewers will know that this is not ordinary junk food. Then the scene escalates quickly with the music. There are several stings in the music that are loud. These stings are enough to make one jump, so I knew I had to show the most shocking scenes during these stings. These scenes include the hamburger jumping out of the trashcan and eyes suddenly appearing. Then the hamburger jumps towards the main character. All of these shocking actions happen during the stings to match the genre. After the hamburger I introduce all the other foods by having them suddenly appear as the character is trying to avoid the hamburger.
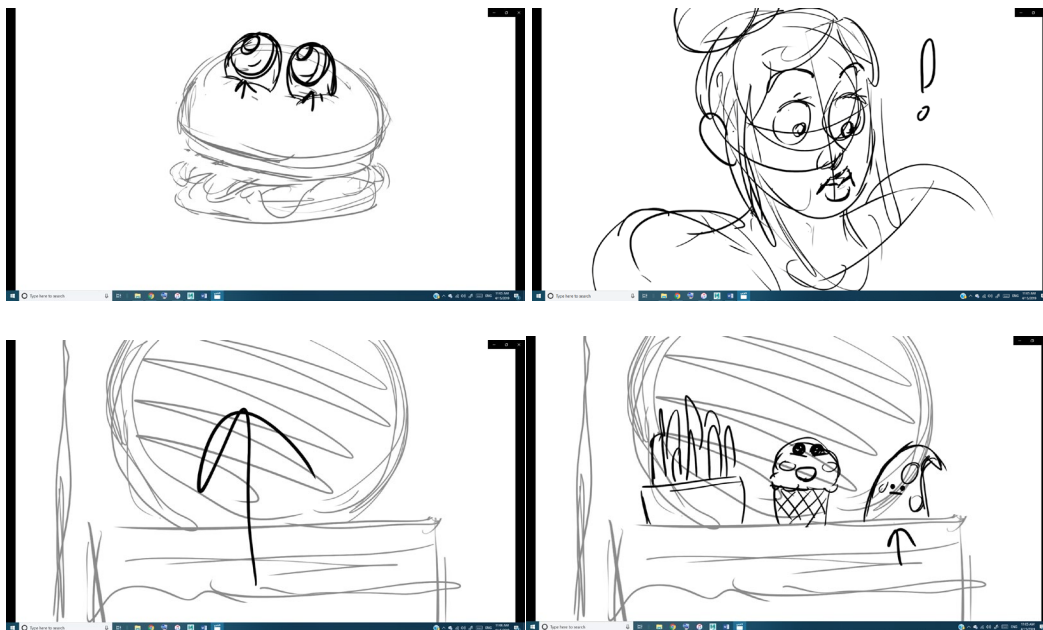

Afterwards there is a lull in the music and I decided this is the part where the screen should go dark before flashing another scene later. I fit this in by having the character fall down and black out while all the junk foods surround her.

After the black out, the stings pick up again and I decided to escalate the situation further by having the main character tied up by the food. After breaking free the main character stabs the hamburger. Afterwards, there is a scene of the healthy food being burned by the junk food as they look on. I also changed their faces to be more unsettling.

After these scenes there is another lull. I felt like I needed to have a corner jump scare at the very end. I have the main character crawling behind her kitchen island and as she rounds the corner, the ice cream will suddenly appear with a black dripping face.
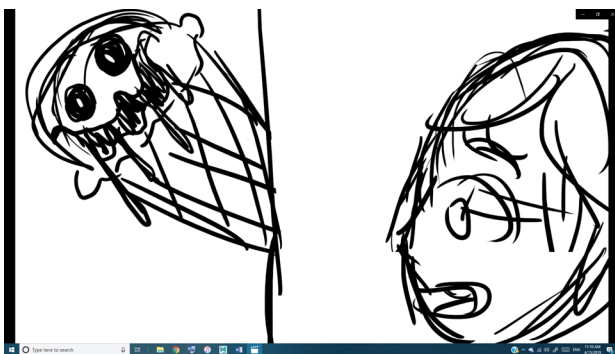
I was satisfied with the pacing and I felt that I nailed the tone and genre, so I began animating the piece.

Animation

Thanks to my animatic I knew exactly how many seconds each scene should be to match my music. I multiplied the seconds by 24 to find put how many frames I would need to set up each Maya scene file. The first scene I attempted was the pan scene. I wanted to make sure it would look good since it is the first scene of the trailer. After starting the blocking for the pan scene, I moved on to completing all of my simpler scenes. These scenes include most of the scenes during the stings in the music. These scenes were all 1 to 2 seconds and I wanted to get them done quickly so they could render while I worked on more complicated scenes. The animation went well, and I moved on to editing.

Editing

I needed to color correct my video to match the genre. I wanted to start with a colorful look and slowly change to a darker scene. I felt that going from lighter to darker color would match the tone I wanted to create. The colors should get progressively darker as the visuals get more intense. I made these modifications in post with Adobe Premiere. I mainly focused on saturation. I know horror films tend to be low saturation with a dark color palette. I used Lumetri color to adjust the saturation and added a vignette on the border. The last part was adding a title to the video. I chose a font that had an edgy look to imply danger. Once the editing was done my project was completed.

Complications

The only complications that I had was with my own rigs. The first issue being my Zbrush human character model, and the second issue being with my food rigs.

I modeled the Zbrush rig for the first semester and planned to have it rigged for the second semester to begin animating, but I could not figure out how to export it with lower resolution. This was my main part of my thesis which would have contributed to most of my research for the project. I made the decision to remove this aspect because I had taken so much time already. In the end, I am an animation student and I wanted to have time to complete my animation. I hated to scrap my rig idea, but it was probably for the best. I believe that had I continued, my rig would not have been the best for animation. I do not believe I would have been able to get the expressiveness I wanted. This contributed to my decision to scale down my project to a trailer instead of a full musical short in order to complete the project on time.

My food rigs worked fine in their own scenes but had issues after being imported into my animation scenes. I had to scale them down, but I had not accounted for that in the original rig. I had to take each rig back into its own scene and figure out how to set it up to scale. I ended up being able to scale each rig, but when I did the controls would trail behind the mesh.
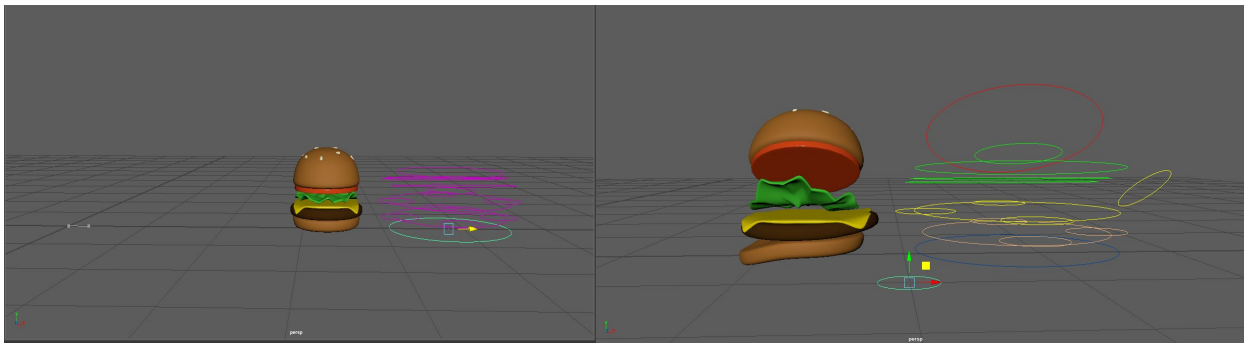
In the end the controls still worked so I just had to use the rigs as they are. I did not want to spend all my time rigging when the main purpose of my project was animation. I will

eventually go back and complete the rigs so that they will scale properly. I think I could get good use out of them later.

Results

I am very satisfied with the overall result. I believe I nailed the thriller genre. I wanted to practice animating to music and animating more acting animation. I was able to do that with this piece while using my modeling, rigging, and editing skills. I learned a lot about the animation process and pipeline which could be helpful in the field. I was able to adapt to the complications that I had and still created a finished product. I'm glad I did not get hung up on my rigs, because I wouldn't have a finished product. While, the rigs are not perfect, I got a lot of practice animating. I was able to practice animating to music while creating a few decent acting pieces. Even though, my exploration of other aspects of digital media where not as successful, I still got great experience understanding an animation pipeline. I had a great experience combining acting and music to create a completed piece that I can be proud of. I really enjoyed working on this piece and will be including this piece in my portfolio.

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