Snakey love

Linlin Si

Follow this and additional works at: https://scholarworks.rit.edu/theses

Recommended Citation

This Thesis is brought to you for free and open access by RIT Scholar Works. It has been accepted for inclusion in Theses by an authorized administrator of RIT Scholar Works. For more information, please contact rit scholar works@rit.edu.
SNAKEY LOVE
by Linlin Si

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF FINE ARTS
IMAGING ARTS/COMPUTER ANIMATION
SCHOOL OF FILM AND ANIMATION
ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK

March 2012

Tom Gasek, Chair
Assistant Professor
School of Film and Animation

Stephanie Maxwell,
Professor
School of Film and Animation

Mark Reisch,
Visiting Faculty
School of Film and Animation
Table of contents

Abstract
Acknowledgements
Synopsis
Treatment
Part One : Ideas
Part Two : Pre-production
  1) Script
  2) Concepts
  4) Storyboarding
  5) Animatic
  6) Summery of pre-production
Part Three : Production
  1) Modeling
  2) Shading and Texturing
  3) Rigging
  4) Lighting
  5) Animation
  6) Rendering
Part Four : Post-production
  1) Editorial
  2) Sound FX, music design
  3) Credits, special FX
  4) Learning experience
Part Five : Summary
Appendix
Abstract

“Snakey Love” is a four-minute long animated graduate thesis film. The short features a female snake who pursues her love for everyone that seems to be a snake shape, but she always fails because they are all not interested in a creature that is not their same species. However she finds her lover at in end by accident (Because there really was an accident).

This short film is a 3D (three-dimensional) computer animation, which means that the final vision appears on the screen was generated by using computer 3D software. It is all done by a series of different processes like modeling, shading, rigging, lighting, rendering, etc.

This paper analyzes and delineates the entire process of making this film from five different main stages. They are ideas, pre-production, production, post-production, and final conclusion and experiences.
Acknowledgements

This film would not have been possible without my thesis advisor and chair Tom Gasek, an assistant professor at the School of Film and Animation, RIT, who encouraged and challenged me through the entire process of making this film. I would also like to show my gratitude to my other committee members, professor Stephanie Maxwell and Mark Reisch. They offered me so many invaluable suggestions and constructive feedback. Especially thanks to Mark, he helped me solve a lot of technical problems.

I am indebted to many of my friends and colleagues who had contributed significantly to the success of my film. Thanks all of you. And a special thanks to Peng Peng for helping me do the extra modeling and rigging. I offer a special thanks to my family for the greatest support.
Part One: Ideas

An outstanding story builds up a good film, a neat idea pave the road to a good story.

Most of the time, I am struggling and stuck at the first and the most important stage of the production, the ideas. I always have trouble with making stories. Although I have taken the story writing for animation course, and I already got some good ideas from that class, I am not satisfied with any of these ideas. I always wanted to make a perfect story with all the structures that a good story should have. I guess that is why I always stuck there.

As a matter of fact, a simple story can also make a successful film. Bill Plympton¹ gave me a hint and finally helped me out from this situation in 2010, Tom created a special program called “big apple animation” which I joined with other undergraduate and graduate students. We spent almost three months studying and visiting various studios in New York City. One day we visited Bill Plympton’s studio. He shared his tips of how to make a good animation and how to make money from it. He called it “Plymton’s Dogma” which is “Make it short, make it cheap, and make it funny”.

His “dogma” just enlightens me. That is right. I am not making a feature film while I am making short films. So the story can be short, be simple, and of course, funny. I began to ask myself some simple questions to help me figure out what kind of animation I want to make. I laid down several words with some question marks, they are “who, what, where, when, how” etc. Then I completed those words to simple sentences or questions. For example: who or what is my character? Where this story should be taking place? What happened? With who? How did it happened, and how does it end? Then I kept putting more sentences and details to the story. Another thing I really like to do is put down some key words that I think can be useful. For instance,

¹ William "Bill" Calvin Plympton (born April 30, 1946) animator, cartoonist, director, screenwriter and producer best known for his 1987 Academy Award-nominated animated short Your Face and his series of shorts Guard Dog, Guide Dog, Hot Dog and Horn Dog.
“zombie”, “ninja”, “cartoony”, “dragon ball”, “love story”, etc. It can be anything. It can be something really cool or something you are interested in, it can be a style, it can be a movie, etc.

Using his method I can quickly assemble a main structure of a story by just simply making connections between key words, then put them into those questions that I just asked myself, and combine them all into a paragraph. After this process, I felt more confident about what kind of story I should make. Finally I came up with an interesting idea of a poor lizard, which loses his legs to an accident then becomes a snake-like creature and falls in love with a beautiful snake.

The next thing I thought about is the style for this film. I know I am going to make a 3D film, but either it will be a photo realistic style, or a cartoony style, or it can be a fake 2D style? I used Maya Toon Shader to mimic the style of a 2D hand-drawn for my two-quarter film, so for my thesis film, I want to make it some realistic. However, to achieve a photorealistic render is never easy, obviously it will take more time and workload to finish it, in addition, it seems totally inappropriate for this fanny cartoon. In sum, I decided to make a stylized realistic render for this film. Then I began to look for some references that really inspired me. “Do penguins fly?” is a very good example, simple story, cartoony, great render but not photorealistic, backgrounds are simple, impressive animation with broad stretch and squash and follow through movement. That is exactly what I wanted to achieve. At this point, I finally got the idea of what I am going to do.

From this process of finding the ideas for my thesis film, I came up with my own “dogma” of how to make a good story: Ask yourself some questions of “who”, “where”, “when”, etc, write down some keywords, do some research and collect some references, and something short and funny may help you sell your story, and last, make it broader, make it more dramatic and exaggerate.
Part Two : Pre-production

After the idea had been nailed down, I moved on to the next stage of production which is called the pre-production stage. Basically pre-production is to give myself a sense of direction, and to give me a better idea of what the final film should look like. In this stage, I have to prepare all the elements involved in the film production. The script had been divided into individual scenes, all the concept designs needed to be finalized, shot list and basic storyboards had been created, some extra storyboard may added to create the animatics. Even though some corrections may still be made, most of the main structure will remain the same. By the end of the pre-production, the script, character design, environment design, color key, storyboard and animatic are hopefully finalized and accepted by me and Chair and all the committee members. The whole process makes me realize that the more detail I make in pre-production, the easier the production making less mistakes and saving more time.

1) Script

First thing first, I have to complete the draft script and get ready to propose to the committees. I finished the first draft just in one day since my story is simple. Tom and I modified some detail together. The final proposal turned out very well, thus all the committees adopted my proposal. Only one problem, they suggested to me to revise the point of view angle of the protagonist from lizard to snake, in this case my production would be more like an integrated adventure. Through a series of modifications, my script was almost complete.

2) Concepts
The next stage is the part of Concept art. Concept art is an important step in the process of making movie or animation. The reason of the importance on concept art decides the way to present the script to audiences vividly. Concept design just like a guideline, which determines a style, a pattern of color, a temperature of light, an appearance of role, and it makes a good reference for 3D work.

Actually, in the summer quarter, I began to sketch some designs for characters and scenes. I wanted to sufficiently use the summer break to have more work done. I was not only searched lots of useful references, designed various kinds of characters, but also started to make some simple models. For the first week of fall quarter, I had plenty of designs to show to my advisor.

Character design, character sheets

Before design these characters, the first step, of course, was to do some research. A number of references which I collected were a great help. I gathered some nice cartoon characters offline, included some very good character sheets from famous feature animations. In order to understand more knowledge about reptiles, like lizard and snack, I went to visit the Nature History Museum in New York. They just held a special exhibition about lizards and snacks, where I gathered precious information from that exhibition.

I started from the lizard design since he is the main role of my film. On the one hand, I have already decided to make a cartoon style, so I intended to exaggerate the design. Big eyes, large mouth, these designs would make him show exaggerated expression. On the other hand, I wanted to stress the features of lizard, such as a long body, long tail and so forth. Finally, the one I decided on was this cute Mr. Lizard which shows in the picture 1. While picture 2 is other different designs.
After that I jumped into the snake design. I kept almost the same design from beginning to the end. Because the snake only has a long slim body, no legs, no other features, the only design I
could came up with at that time is only this one. As a result, the image of snake as shows in picture 3. Other characters like the worm, Mr. Eel and a fisherman, I kept them the same design style with the lizard and the snake. (Picture 4).

Picture 3 : Different snake design

Picture 4 : Other character’s design
Character expression sheets

The next part is the character’s expression sheet. In order to prepare modeling in the future, I ought to define each character with different exaggerated expressions in advance. For example, what kind of surprising face should show up for a lizard? And what kind of happy face belongs to snake? In this case, this work could give me a good reference when I go through storyboarding, modeling and rigging. Some expression only have tiny differences, if I did not clarify them then it would bring misunderstanding to audiences. For instance, surprise and scared looks so similar that may give the audience a wrong impression. In both the expressions, the eyes and mouth are wide open. So how could I express these two difference expressions more accurately? I sought many expression designs from famous cartoons, and learned a lot of classic expressions. I referred to well-known film “Kung Fu Panda” (see picture 5). When scaring, although the panda’s eyes are wide open, but the eyes are looking down, at the same time, the mouth is big opening and also draws back at the corner of the mouth. In fear, the head will dodge back, sometimes tilting to the side (see picture 6, scared expression). However, surprise is not the same. With suprise the eyes will not only go wide open, but also bulge out, and not look down. The mouth is open but not wide, sometimes even dropping the chin down, it looks like it’s going to fall on the ground, the head and neck instead of going back, are leaning forward. It seems like the character wants to see more clearly.
Picture 5: character expression sheet from "Kong-fu Panda"

Picture 6: Scared expression from "Kung Fu Panda"
Through studying the expressions, I was able to express the characteristic more clearly and accurate, and bring them come to life.

Environment design

Another part is environment design. It describes the environmental surrounding of a story. At the beginning, I was uncertain about whether the story should put into a jungle or desert. Although it is possible to have a small pool in desert, but a greater chance to have the lizard, the snake, the worm and the eel in the jungle (see picture 8, jungle). However, considering it may increase the amount of my workload if I use a jungle as background, I gave it up in the last minute and decided to use a simple desert. Originally, I was worried about it being too empty and
monotonous to use desert as background (see picture 9, desert), since there is only one color of the desert. On the contrary, after I finished the first color concept, I found it was very beautiful to use golden desert in pairs with blue sky (see picture 10, desert in color). In addition, a succinct wilderness not only decreased my workload, but also it would not distract the audience compared to a complex background. Moreover, when I thought about the rendering process, light rays, shadows, reflections, as well as trees, leafs and grasses which consist with millions of polygons in the huge jungle, it would be a nightmare. But there are no worries at all to render a desert. For this reason, I preferred to use a desert as background. Besides, no one bothers questioning whether pools would exist in the desert or not.

Picture 8 : background design : jungle
Picture 9: background design: desert, desert hospital

Picture 10: background design: desert in color
Props design

Furthermore, there are also small details that need to be confirmed, such as some props in the scenes. It is not so important compared with the characters and scenes, and these props will not affect the following process too much, besides I may modify the design as the process goes. This picture below shows some of the prop designs. (Picture 11 props design

![Picture 11: props design]

Color key / color scripts

Color key and color script could greatly determine the tone in different scenes, and keep them consistent. Color key is a necessary part especially in a large production like feature animations or films. While in a small project like mine, which only has one scene, and without cooperating with other people, color key seems not as significant as it used to be. It is always better to have color scripts, but I did not do it, because my background concept basically is just a good color key, and there are no color changes in the time through the film, so it is not necessary to draw extra color scripts.
3) Storyboarding

Storyboards help me to visualize and organize all the shots, and help my adviser and committees to have a better understanding of my film, and get a better idea of how to set up the stage and make better compositions. My storyboard did not take me a long time to finish, because I had all the visions in mind already. Sometimes I would rather draw storyboards first, then do the script, because I feel I am a visual type of person, I like to visualize something first, then keep adding another visuals.

Picture 12 : Example of storyboard
4) Animatic

The following stage is to quickly create a simple animatic using a series of images from existing storyboards and edited together to get a better idea of how the scene will look and feel with motion and timing. Sometimes using currant storyboards are not enough to represent the motion, so I added some new drawings to give more details. I also used After Effects to create some simple animation like moving the character’s position, rotation or scale, or I created some basic animation for the cameras to get a better understanding of the story and timing. After I finished the animatic, I made several changes in the editing and timing according to Tom’s advice. After reviewing the animatic with Tom several times, finally I got everything ready for the next production stage.

5) Summery of pre-production:

I planned to finish pre-production in 8 weeks (from script to finished Animatic), In fact I started the idea from spring quarter (March, 2010), then continued the process during the entire fall quarter(September,2010 to November, 2010) plus summer break to finish it. That took much more time than I expected, but it is worth it to have everything be well prepared. If I dive into production stage without giving enough serious thought of what I want to achieve for the final result to look like, I will more likely to waste a lot of time trying to figure it out. Or even worse, if I have to make any changes to anything after I have already done a lot of the parts, then it is back to the drawing board.
Part Three: Production:

1) Modeling:

It was the time to convert the 2D concept image to three-dimensional animation. 99 percent of my modeling was done by polygon modeling. The benefit of polygon modeling is I can easily adjust the shape and controls. I used NURBS for simple shape such as eyes, because it allows me to build perfect arch without having tons of polygons.

Picture 13 : Example of 3d Models : earlier version of Lizard
Next generation of modeling

3D sculpting, as known as digital sculpting, is still a very new technique. But it is getting more and more popular, because it can achieve photo-realistic results easily and efficiently. Sculpting can often introduce details to meshes that would otherwise be difficult or impossible to create using traditional 3D modeling techniques. I explored more about ZBrush and Mudbox in this film. I took the low-res meshes from Maya and brought them into ZBrush and subdivided them several times until I got enough polygons. Then I used different brushes to build up or dig in the meshes to create more details, just like sculpting clay in real-life. (For example the lizard’s skin and the details of the mountains and rocks are all sculpted in ZBrush, and later I converted these details into textures (normal map or displacement map and ambient occlusion map) and reapplied the texture maps on the low-res models, so that I still have these details visible from the distance while not losing performance when rendering.

Picture 14: sculpting details in ZBrush
Topology

A good model, either for animation or for still image rendering, it always has to be as light as possible. You don't need all the extra junk geometry. It will either slow down the rendering, or even crash the computer. Additionally, a good model should always have a good topology to deform the model.

I have five characters including one human and a whole set of backgrounds and props. Most of the models are simple, but some of them still have great details. It roughly took me half quarter to finish all the models.
2) Shading and Texturing

Shading and texturing is similar to choose the right material and texture for a puppet in real-life. Some materials are not easy to simulate in 3D software, such as water or glass, or subsurface scattering effect. Most shaders I used are the basic shader such as blinn, lambert, or phong. I used some Mental ray shader for something that needed specific raytracing functions. Take the water or glass material for instance. Depending on the angle of view, I need the center of the object to be more transparent and less reflective than the outline of the object and it is called the “Fresnel effect”. In this case, the Mental ray material is much easier to manipulate and it has better result than building the shading network manually by using the Maya default shader. I also used this technique for the eye clear shader. I used Mental ray sub-surface scattering shader for some materials such as the skin, candle and onion skin, to simulate the light bouncing around inside different sub-layers under the surface. The texture maps I used the most are color maps, normal maps or bump maps, specular maps, transparency maps and reflection maps.

Picture 16: Render of a eye
Traditional texturing VS. 3D painting

I used both traditional and 3D painting method for my textures. I exported object’s UVs from *Maya* and imported it into *Photoshop* to paint the textures. Using this method I can easily lay out some images on top objects, and it’s easy to get details. But the problem is that I cannot avoid seams by painting on a flat 2D file.
Another technique I used is to paint textures with ZBrush. The biggest advantage of 3D painting is that you can get a seamless texture by drawing on top of the 3D geometry directly. On the other hand, it is hard to paint little details unless you subdivide the model multiple times until it gets enough resolution of geometry to paint on. Even if you got enough geometry, you may still get a blurry texture. Because ZBrush is actually colors each individual vertex, depends on the resolution of the model, the image resolution may not match with the resolution of the model, so each pixel may not correspond exactly with each vertex, so it may blend the color between two vertexes, and make the texture blurry.
Sometimes I would like to combine those two types of texturing methods together to get the best result by taking both benefits.

3) Rigging

Rigging is a tricky part. Some people like it, some people hate it. In my opinion, rigging is like adding bones and joints to a puppet in real-life. Rigging can be really complicated. Sometimes it took me a few days to figure out just one simple thing. So I have to approach it precisely, strictly and logically. Sometimes it can be very boring too, such as painting skin weight or repeating the same process over and over again. But someone has to do it.
Rigging problems

I did most of the rigging, two human-like characters, and three snake-like characters. Rigging the lizard and the human is not difficult for me, because this is the normal rigging that we all learned from school. But rigging a character like a snake is totally another story. It was the biggest challenge I have ever confronted during the entire production. I had a lot of troubles when I did the snake rig, because I have never done this kind of rigging before. It took me a while to figure out how to make the rig functional and easier to use when I put it into animation. I had a meeting with Mark, he helped me solved this technical problem.
4) Lighting

The lighting part was very easy because I only have one big scene in this film. I used Mental Ray Rendering Engine’s default physical sun and sky to light the scene up. I noticed that it is very easy to get the final rendered image overexposed using the default settings. So I just brought the intensity parameter down to reduce the intensity of the light, and it looks even better if I tweak the color correction settings for the output camera. I can tweak the gain and gamma parameters in the camera exposure control if I don’t want physical sun and sky wash out my textures and colors. I can also go to the Mental ray render settings, check the Framebuffer under Quality tab, tweak the gamma settings here to get better results. I also used image based lighting to light up the shadow and add more additional details to the scene.
Picture 22: compressing correct and overexposed image

Picture 23: Camera exposure settings and render settings
5) Animation

Finally, I got into not only the most important part, but also the most difficult and most time-consuming part, the animation stage. This was the part that I really wanted to study and improve.

Everyone has their own work flow. And I like to do animation in different passes, and keep tweaking and adding details to each pass until satisfied. First I did a rough animation by just moving the characters around to get the sense of timing, and then I kept blocking through the animation, adding more key frames. After that I divided the entire film by shots, and worked by individual shots, adding more in-betweens. Next I began to introduce some facial animation and some details such as fingers and tails. Next thing I did was to keep adding more details and poses to make the movement smoother. The Final step I did was to adjust the animation and add some extra elements such as the eyes darting, blinking, extra facial animation, offset some timing to make the movement non-symmetrical.

- 12 principals

12 animation principals are not only applied to 2D animation, it also works for 3D animation. I kept reminding myself to follow those principals while I was making the animation.

- You have to be a good actor if you want to be a good animator

The oldest animation cliché says “An animator is an actor with a pencil”. It is so true. A good animator can bring the character to life. The most difficult part in character animation is to give the character a characteristic or personality. How the character moves depends on how I animate the character, and how I animate the character relies on how I act for the character. The way I act directly affect my animation. The worst thing is to animate without even thinking. The animation may turn out to be either uninteresting, or too exaggerated even make it hard for people to believe. How do I make the animation believable and interesting? The answer is that I have to
keep the balance between the two. Good acting is the key. And this is the part that I need to focus on.

■ Reference is always the best friend for an animator

References are always good. Every time I had created a difficult animation, I either go search some reference online, or shoot my own reference. Sometimes I like to do some drawings too. I helped myself figured out the most important key poses and timed by just sketching out those poses and time out the timings, and it is always works very well. It is much better than just thinking of it in my mind regarding the movement.
Animate the eyes

Eyes are the windows to the soul. Eyes show inner thought because it makes the most characteristic out of character’s face.

The eye animation is the most important to show the emotions of a character, either in 2D and 3D. The audience always looks at the eyes of the character first. So it is never redundant to spend extra time on the eye animation. Eye darts show the thinking process. The little eye shifting
animation reveals more characteristic. For this reason, I spent a little bit more time on the eye darts animation.

Considering the animation, a small character like the lizard in this film, I thought the small lizard should move faster. So when I animated this character, I had to avoid using actual timing form humans, I had to make him do everything faster, and always give him a broader movement.

![Lizard in close up]

Picture 25: Lizard in close up

- Motion capture

I did some researches and experiments of motion capture. I do not mean to use motion capture to do all the animations, but I wanted to explore more about this new technique to help me to enhance my animation by adding a little bit of realistic detail. I learned the basics form a motion capture course at RIT. I recorded several takes of basic movement such as walk-cycles, standing poses, etc. The result was not so satisfying. Though motion capture is good at capturing the realistic physical interactions such as secondary motions, weight and exchange of forces, but I wasn’t expecting too much of the realistic movement in this cartoon style animation. So I did not
use any of motion capture movements for my animation. However, I found it is very helpful to use this mocap technique as a reference to guide me through the animation process. I wanted to explore more on how to recreate a realistic camera movement by using any of motion capture technique. I did some experimenting of tracking the mouse movement and applying it onto a camera in 3D. I also found mocap might help me easily get the right timing. A free Maya mel script called Mouse mocap toolkit created by David Russell, can record any mouse movement in Maya. I figured out my own way to do better timing by capturing the mouse movement. Basically I just used the mouse to draw a curve on the screen to represent a movement that I am going to animate, the computer will capture the movement by tracking the mouse, then I can see exactly how many frames I used, I also can see the motion path of this movement, then I can use this as a reference to guide me to animate a movement.

Animating is a long process. I have two main scenes, one is in the open space beside the pond, and another one is in the hospital. I split all the animation into 8 different sequences, and worked on each sequence separately. There is roughly around 3 minutes of character animation, and I was planning to use ten weeks to finish it, but actually I spent four more weeks on the animation. Though it is a good thing to have successful animation, the problem is I have less time to do other processes.

6) Rendering

After I had done 80 percent of the animation, I began to set up and do the rendering part. It is not possible to view the final image without a high quality render. A good render not only looks pretty, but it should be as close to the concept design as possible.

I used Mental ray renderer. I used different render layers and render passes. I rendered HD 1080p size, set up 3 - 4 different render passes include an ambient occlusion pass (to add the extra contact shadow) specular or reflection passes, and a depth pass (add motion blur in AfterEffect.
later in post-production.). I did some optimization of the render settings, such as lower the retracing rays, adjust the final gather samples and so forth, in order to shorten the render time, but also maintain as much of the same quality as I used before. The final result turned out really good. With five characters, huge environment, water, a lot of 4K textures, final gathering all kinds of time consuming features, the render time cut from around 10 minutes per frame to around 2 to 3 minutes, which means I saved 500 hours of render time.

Picture 26 : Snap shot of final render
Part Four : Post-production

1) Editorial

Editing is not a big part in animation compared to live action filmmaking, because a lot of shots are already pre-edited from the first stage, and my committees and I always keep updating the edited file during the process, so the final editing was finished easily and quickly. And I would say this is the best work-flow to do animation, which save me from extra works from the beginning.

Because animation it is so different from live-action film production, while filmmakers always want to add more footage when they are shooting, so that they will not be straggling when sitting in the editing room. But in animation I do not want to animate any extra seconds. So be well prepared in pre-production, keep updating edit during the process, and be organized with any shots, then I know where to start animating and where to end.

2) Sound FX, music design

The sound design is the most unsatisfied part in this film. I was planning to screening my film at November 11th, but I didn’t have any music/ sound design until the end of September, because I had a delay in may animation, so I put all my energy into animating. The worst thing I did is ignored the sound and music. I should have planned this at the very beginning. I didn’t get a composer in the end. I know the sound design plays a very important part in a film, but I thought the sound part was going to be very easy in my film. I just need some ambient sound, maybe I could use stock music at the beginning and the end, that’s it. Therefore I assumed it could be done in just couple days. But I was wrong. I got a job offer at October 10th which is just one month left before I am going to screen my film. The job was perfect for me but I had to relocate to New York City. I didn’t want to lose this opportunity to work and learn in the real industry. However it means I had less time to work on my film if I took this job. It’s really hard to me to make a
decision. Finally I decided to take this job but I only worked as a part-time position, so in this case, there would be more time to be used in my thesis. But still there was a problem that I have to deal by myself, which I was planning to get a composer and work with him/her together in the last month to get the sound done, but since I relocated to New York so I would not able to meet a composer, so I have to work on the music by myself. Plus I had to work and tweak the animations and rendering and compositing. So it turned out as a result, I had really bad sound design. If I had a chance to redo the sound and music, I definitely will pay more attention to this part. This is a really serious lesson I had learned from my film.

3) Credits, special FX

When I finally came to do the credits and special effects is when the film was almost due. There were about only one or two days left. I tried to keep the credits screen simple but also keep the same style of my film. I used an old paper texture and made a western “wanted poster” in the background for my credits. It took me about half an hour to do the credits, and it turned out very nice.

It was very nice to have some simple special effects in this film to make it look just perfect. Something like water splashes, sand and dust, it is necessary to have those small elements in there, but not necessary to recreate in 3D. Some stock footage, even some still images you can be found everywhere and is good enough to illustrate the little details, and are much easier for you to work for animation or take less time to process.

4) Learning experience of post-production
Comparing to the traditional film-making, post-production in animation is much easier and quicker to do. Even though this is still an important part that you really have to pay attention to. Something like music/sound design, you have to really care or prepare in advance.

Part Five : Summary

Although this was not the first film I finished independently, it was the first time for me to make a film that with so many characters, in such length, integrated and so long in process. In the last year for development of this film, I practiced and combined all the knowledge I had learned about film making. It contains all my hard work. I really appreciated all the people who gave me the supreme support and help.

As an animator, I learned a lot of animation techniques from this experience. I had a great chance not only to learn from the process, but also to practice and apply to production, to turn it into reality and show it in front of an audience. Actually, I had learned so many certain things not limited in only animation technique. Thing like acting skills, overall planning and management for a production, learning experience from the problems I encountered, those are the most priceless experiences that I will carry on and benefit from in the future.
Appendix

1) Concept arts
2) Storyboards
3) Original Proposal
4) List of references
5) Snap shots from film
Use Vertical Line of Action
Service some fur fast

Lizard: shout like the Goddy close up snake start
Start by:

snake say work

1 2 3 4 5 6 7 8
A Snake's Love

By Linlin Si

GRADUATE THESIS
Approved For Submission

_________________________
Tom Gasek (Chair)

Stephanie Maxwell (Committee)

Mark Reisch (Committee)

04/23/2010
1. Synopsis

This is a story about a beautiful female snake who wants to find her true love and pursues every lover bravely, but fails every time. Fortunately, she finds her love accidentally at the end.

2. Rationale

The overall objective of my thesis is to create a short film mainly focus on the character animation, with a nice 3D render of cartoonish style. I am going to push myself to improve my acting skill to really establish the dramatic body language and facial expressions and exaggerated movements of the character. There are several films have inspired me the most.

Do Penguins Fly? - Fabrice Senia
The Passenger - Chris Jones
In the Rough - Blur Studio
Raving Rabbids - Ubisoft (created for game)

3. Treatment

A beautiful female snake wants to find a boyfriend. She encounters an earthworm and asks, "Would you like to be my boyfriend?"

"Miss Snake, you are too tall for me," the earthworm answers. The snake then curls her body to appear smaller. The earthworm declines her with a shake of his head, "I’m very sorry, but we are not in the same." Then the earthworm slithers away.

The snake feels very sad. Suddenly, she hears a voice, then turns around and finds out that the earthworm is caught by a man. The man is ready to stick the earthworm on a fishhook. The snake springs up and hisses at the man. The man gets frightened. He flings the earthworm into the sky and runs away. Suddenly, an eel leaps out of the nearby water and catches the earthworm. The snake is struck by the beauty of the eel. There are two hearts showing in her eyes, while she is looking at the eel's fast, smooth and graceful movement. eel and asks, "She stops the You are so tall and strong. Are you willing to be my boyfriend, dear Mr. Eel?"

The eel shows a slight smile on his face and says, “Huh? You don't even swim, Miss Snake. How dare you ask me to be your boyfriend?"
Then the eel jumps into the water and disappears. The snake follows the eel, jumping in the water without hesitation. She wiggles her body very hard and tries to catch up to the eel. After swimming for a while, she starts to sink into the water. A lizard jumps into the water suddenly and rescues the snake. The snake is fixated to the lizard when she first looks at him. "You are tall, strong, and you can swim. Would you complete me, my dear?" asked the snake.

The lizard feels so embarrassed and says: "Well, you look pretty and you have a slim body, yet I will never be with you."

"But, why?" The snake asks.

The lizard says," Because you are handicapped! You have no legs!""

The lizard turns back to the road. All of a sudden, a large truck flies by and runs over the lizard. The snake wants to rescue the lizard, but it is too late.

When the lizard opens his eyes again, he is lying on a bed and finds the snake curling up next to him. The snake smiles to the lizard and says," Now, we are so matched."

"What . . . why . . . what happened?" The lizard is confusion. Then the snake curls up closer and kisses the lizard. Then her eyes stare at the lizard's body. We see the lizard covered by gauze bandage, and his arms and legs cut off.

Fade out:

There is a loud scream from the lizard.
"A Snake's Love" - Linlin Si

4. SCHEDULE

Fall quarter (20101) Sep. 6, 2010 - Nov. 20, 2010: script, design, storyboard, animatic, dialogue recording, sound design, modeling

Winter quarter (20102) Nov. 29, 2010 - Feb. 26, 2011: rigging maybe go back change some model, soundtrack, most of the animation

Spring quarter (20103) March 7, 2011 - May 13, 2011: finish animation, render; compositing and editing, soundFX, credit
"A Snake's Love" - Linlin Si

5.BUGETS

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>QUANTITY</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sketch Pad 11” x 14”</td>
<td>1</td>
<td>$11.29</td>
</tr>
<tr>
<td>Sketch Pad, 8.5” x 11”</td>
<td>1</td>
<td>$6.59</td>
</tr>
<tr>
<td>Color Pencils 12/Box</td>
<td>1</td>
<td>$5.29</td>
</tr>
<tr>
<td>Drawing Kit</td>
<td>1</td>
<td>$10</td>
</tr>
<tr>
<td>DVD and Cover</td>
<td>20</td>
<td>$21.99</td>
</tr>
<tr>
<td>Software Upgrade</td>
<td>3</td>
<td>$300</td>
</tr>
<tr>
<td>Festivals</td>
<td>5</td>
<td>$300</td>
</tr>
<tr>
<td>Print Fee</td>
<td></td>
<td>$80</td>
</tr>
<tr>
<td>SoundFX Literary (elective)</td>
<td>1</td>
<td>$200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$935.16</strong></td>
</tr>
</tbody>
</table>