unfolding Thailand: Tourism Promoted by 3D Motion Graphics

Nonthawan Pisessith

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 ritscholarworks@rit.edu.
Unfolding
THAILAND

Tourism Promoted by 3D Motion Graphics

NONTHAWAN PISESSITH

A Thesis submitted in partial fulfillment of the requirements for the Degree of Master of Fine Arts in Visual Communication Design

School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Approval Date
December 10, 2014
Thesis Committee Approval

Nonthawan Pisessith
Rochester Institute of Technology
School of Design
MFA Visual Communication Design

Title
Unfolding Thailand
Tourism Promoted by 3D Motion Graphics

Submitted by
Nonthawan Pisessith
December 10, 2014

Approvals

Chief Advisor
Chris Jackson | Graduate Program Director
Visual Communication Design

Associate Advisor
David Halbstein | Assistant Professor
Visual Communication Design

Associate Advisor
Shaun Foster | Assistant Professor
Visual Communication Design

School of Design Administrative Chair
Peter Byrne

Thesis Candidate
Nonthawan Pisessith
I would like to express my sincerest gratitude to everyone who supported, guided, and had faith in me. Without them, this thesis would not have been possible.

My special appreciation goes to my thesis committee: Professor Chris Jackson, Assistant Professors, David Halbstein and Shaun Foster. Throughout my year-long project, each of them kept me focused on my work and encouraged me to develop my creative thinking process. Their invaluable feedback and guidance strengthened my abilities to grow and succeed.

A very special thanks goes to my mom, dad, grandma, and brother as well as friends who provided support and motivation when I needed it most. They encouraged me to have faith in myself.

A sincere thank you goes to each survey participant who devoted their time to provide invaluable feedback.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Survey of Literature</td>
<td>3</td>
</tr>
<tr>
<td>Design Process</td>
<td>7</td>
</tr>
<tr>
<td>Sketches</td>
<td>8</td>
</tr>
<tr>
<td>Storyboard</td>
<td>9</td>
</tr>
<tr>
<td>Color Palettes</td>
<td>11</td>
</tr>
<tr>
<td>Modeling</td>
<td>12</td>
</tr>
<tr>
<td>Texturing</td>
<td>28</td>
</tr>
<tr>
<td>Lighting</td>
<td>33</td>
</tr>
<tr>
<td>Animation</td>
<td>35</td>
</tr>
<tr>
<td>Rendering &amp; Compositing</td>
<td>39</td>
</tr>
<tr>
<td>Branding</td>
<td>40</td>
</tr>
<tr>
<td>Poster Cover Design</td>
<td>43</td>
</tr>
<tr>
<td>User Testing</td>
<td>44</td>
</tr>
<tr>
<td>Conclusion</td>
<td>51</td>
</tr>
<tr>
<td>Appendix</td>
<td>52</td>
</tr>
<tr>
<td>Dissemination</td>
<td>52</td>
</tr>
<tr>
<td>Thesis Proposal</td>
<td>53</td>
</tr>
<tr>
<td>Bibliography</td>
<td>78</td>
</tr>
</tbody>
</table>
Abstract

Unfolding Thailand is a project that aims to bring a new approach in introducing the country as well as promoting the tourism. My specific scope of this project is to create a visual representation of popular destinations from the northern, central, and southern areas through the use of 3D motion graphics. These three of the six regions in Thailand are chosen because they vary in geography, have a very distinctive characteristic and most importantly, they are the most popular vacation destinations for locals and tourists alike. Northern Thailand is surrounded by mountain ranges and is a home of exclusively stunning Lanna-style temples. Central Thailand, focusing mainly on Bangkok, the capital of Thailand was ranked as the most visited city in the world in 2013 according to TIME magazine. Lastly, Southern Thailand, especially on the West side facing Andaman Sea, possesses some of the best beaches, islands, and diving spots in Southeast Asia.

Keywords

Tourism, Thailand, 3D, Motion Graphics

Introduction

Thailand’s economy relies heavily on tourism. The Tourism Authority of Thailand announced that between January and April of 2013 about 9 million trips to Thailand were booked\(^2\). The diversity of Thailand’s range of geographical features allows tourists to enjoy various activities, from hiking adventures or visiting historical temple sites in the North, to embracing a mix of traditional and modern life in Bangkok, and finally to relaxing on the beach in the South.

The Tourism Authority of Thailand, also known as TAT, is the organization that is responsible for Thailand’s tourism promotion. The organization has two main marketing slogans; \textit{Unseen in Thailand}, aimed toward Thai audiences, and \textit{Amazing Thailand}, targeted internationally. Linear video has always been the medium of their advertising.

\textit{Unfolding Thailand} differs from the traditional TAT commercials in that it is meant to be a visual guide of the highlighted locations based entirely on the use of computer graphics design and is aimed towards both groups: Thai and international audiences. Nowadays, TV production increasingly uses computer graphics design elements such as 3D modeling, motion graphics, and animation to create a stylized visual. This new visual style could generate interest to a wide variety of audiences with its creative and visually stimulating models as well as the story through the flow of the animation. Structures of locations will be animated, emerged, and unfolded. By highlighting specific locations like \textit{Unseen in Thailand} and giving more focus to the most important locations from \textit{Amazing Thailand}, the \textit{Unfolding Thailand} allows all types of audiences to become immersed in the visual experience of a journey throughout the country and created greater interest in the field of computer graphics design.

My research focuses on looking at multiple visual inspirations, different technical aspects, and information for my subject matter. I looked into different styles and techniques of creating the visual 3D modeling, cinematography, and animation; ranging from low-high poly modeling, flow of the motion, and style, which present traditional Thai design to a new audience. I researched several web-based videos for commercials that also use 3D modeling and motion graphics, some of which were awe-inspiring and impressive.

Moreover, the research looks into a variety of technical software used to create the project (Maxon Cinema 4D, Autodesk Maya, and Adobe After Effects) as well as various locations available for the project. Each of the locations is from a different part of the country and uses the idea of transportations to create a transition between locations.

**Moving Graphics: New Directions in Motion Design**

This book showcases the latest motion graphics works created by some of the world’s leading studios. Descriptions and concepts are written for each project, giving the audience their thought-processes behind their works. Various works and different visual styles presented in this book are the stimulants for ideas for my projects.

**Elastic: Game of Thrones**
http://motionographer.com/theater/elastic-game-of-thrones/

This is a document of an interview with Angus Wall, the director of the *Game of Thrones* title sequence. He revealed the production process - from sketching, concept art design, to some techniques that were used to create the 3D virtual map of kingdoms. This article gives me a better understanding of how the piece was created. I feel that the concept and the flow of the motion are particularly fascinating and influential.
Light for Visual Artists: Understanding & Using Light in Art & Design
By Richard Yot
Laurence King

Light for Visual Artists is one of the best books about lighting that I came across. This book does not demonstrate how to do lighting in 3D software but rather examines lights in real life such as natural light from sunset and artificial indoor light and how they impact the mood or create the symbolism to that particular scene or movie. Lighting scenes was my weakness in the 3D scope. After reading this book, I have a better understanding and I am able to make decision on different approaches for lighting each scene.

Digital Lighting and Rendering
By Jeremy Birn
New Riders

This book is recommended by a 3D lighter I contacted particularly for my thesis. It focuses primarily on how to do lighting and rendering in 3D software to achieve certain looks. It contains a blend of generic and non-specific software information on the lighting from the fundamentals of lighting design to lighting workflow and lighting in production. I typically skim through books and look at images but I truly enjoyed reading this book.

The Animator's Survival Kit
By Richard Williams
Faber

This is one of the best resources for animators. The author, Richard Williams, explains and illustrates essential techniques in animation by hand. I followed the concept easier especially with the timing, pacing, and walking cycles. Although the content focuses more on the traditional hand-drawn animation, the fundamental principles of animation apply across the 3D animation as exemplified by Pixar’s Toy Story.
Urban Environment Creation in Maya
By Justin Marshall
Digital-Tutors
http://www.digitaltutors.com/tutorial/
2783-Urban-Environment-Creation-in-Maya

This course introduces 3D environment modeling workflow with texturing and UV Mapping techniques, which are suitable for game industry, film production, and architectural visualizations. This course teaches me the amount of required details I should expect to have to create an exceptional model and how to layout UV mapping and apply textures.

Sculpting Workflows in CINEMA 4D
By Justin Marshall
Digital-Tutors
http://www.digitaltutors.com/tutorial/
849-Sculpting-Workflows-in-CINEMA-4D

CINEMA 4D R14 has a sculpting feature similar to ZBrush and Mudbox. This course gives users an understanding of each sculpting tool, brush settings, stamps, and other functions. With the sculpting function built in, I should be able to create details to objects and do the animation and/or motion within single software.

Introduction to Animation in Cinema 4D
By Delano Athias
Digital-Tutors
http://www.digitaltutors.com/tutorial/
1514-Introduction-to-Animation-in-CINEMA-4D

This course teaches users basic animation techniques in CINEMA 4D, using keyframe, F-curve, and Xpresso. Path animation, edit and blend animation, bake motion and optimize data are also covered. The techniques that I have learned through this research could improve the motion in my project by making it possible to create a smooth flowing animation.
**Beginner’s Guide to Rigging in Cinema 4D**  
By Delano Athias  
Digital-Tutors  

This tutorial covers essential keys of rigging in Cinema 4D from parenting objects, using joint tool, binding, and editing skin deformers. I did not have a chance to take a rigging class, so this is a perfect tutorial for me to understand the process within an hour.

**Subject Matter**

**DK Eyewitness Travel Guide: Thailand**  
Philip Smith, Philip Blenkinsop  

In addition to photographs of attractions, festivals, a list of the best hotels, shops, bars, and restaurants in Thailand like many travel guides, this book shows Bird’s-Eye views of locations and street-by-street maps of complex sites. With the unique top view maps and illustrations, this guide makes it easier to visualize and create the details in my model. The guide also provides other information about the attractions and festivals that could potentially add more aspects to the subject matter.

**The Arts of Thailand**  
Steve Van Beek, Luca Invernizzi Tettoni  

This book covers Thai arts and architectures as well as the history from different period; prehistoric to Rattanakosin (Bangkok). It includes pictures of work from painting, sculptures, building, and wall murals. These works are the traditional design presented in Thai arts and I plan to incorporate a different styling of these works into my project, giving the traditional styling a modern twist.
Design Process

Thesis Parameter

<table>
<thead>
<tr>
<th>Presentation</th>
<th>An animated 3D motion graphics video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>1.30 minutes</td>
</tr>
<tr>
<td>Format</td>
<td>Full HD 1920x1080 pixel</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>30 fps</td>
</tr>
<tr>
<td>Compression</td>
<td>H.264</td>
</tr>
</tbody>
</table>

Software

- Autodesk Maya
- Maxon Cinema 4D
- Adobe After Effects
- Adobe Photoshop
- Adobe Illustrator

Target Audience

My target audience includes local Thai Residents and international audiences, both male and female, ranging in age from 18-35 years old. This age group covers college students traveling with friends, traveling families, and working people who are looking for a special place for vacation.

Design Ideation

Since I knew that I wanted to use 3D motion graphics as an approach to promote the tourism of Thailand, I initially considered whether I wanted to achieve a very realistic look or a more cartoonish style. They are both very challenging but I realized that I did not want to try to replicate the realistic look that has already been achieved in live film footage. Also, in order to stay focused on my original intent, I aimed to introduce Thailand in a way that has never been done before.

My goal was to showcase the diversity of Thailand’s geographical features in the North, Central, and South regions using means of transportation from those areas as connections between scenes.

I searched for visual inspirations that are relevant to traveling and scene designs. Then, I created an asset list, sketches, storyboards, and animatic outlining the visual of the animation (Fig. 1, 2). I kept sketching and improving the storyboards to explore different camera shots and search for possible transitional options from scene to scene (Fig. 3). The animatic allows me to refine the pacing of the entire animation while combining with my test audio.
Sketches

Fig. 1. Nonthawan Pisessith
*Animating Concepts*, 2014
Pen Medium, 8.5 in x 11 in
Storyboard

Fig. 2. Nonthawan Pisessith
Storyboard Concepts, 2014
Pen Medium, 8.5 in x 11 in
Fig. 3. Nonthawan Pisessith
*Storyboard Redesign, 2014*
Pen Medium, 8.5 in x 11 in
Color Palettes

I established color palettes for each scene. They were picked from reference images and overall atmosphere of those regions. Although the places are distinctive in geography, I chose a similar saturation of colors throughout the project for smooth transitions and consistency.

North

Central

South
Modeling

My modeling workflow was to create individual models in Autodesk Maya with basic techniques of extruding and merging vertices. I created the objects in Maya and exported them as .obj file format for animation in Cinema 4D. I noted that smooth objects permanently prior to export results in a much larger file size, and Cinema 4D may not be able to handle it. Therefore, I exported lower resolution geometries that I later up-res in Cinema 4D.

Although my intention was to create a stylized version of Thailand, I wanted my models to visually remain as precise as the actual place. So, reference images play a major role in my thesis. They are frequently projected within the Maya scene as a start for those places or objects that require an accurate scale, such as a temple site, car, and whale shark.

Since this is my first time creating models for the purpose of animation, many aspects were taken into consideration. I had to determine how much detail I wanted to create for each object, how would that object be animated, and which part of an object needs to be modeled separately for the ease of animation.
Wat (Temple) Phrathat Doi Suthep is conceivably the most famous and sacred site in Chiang Mai, the largest city in Northern Thailand. The temple is located on the top of the mountain named Doi Suthep, hence where its name is derived. The golden chedi resides at the heart of the site, which is built to enshrine Buddha’s relics. The temple can be reached by either a 306 step staircase guarded by Naga (serpent deities) figures that used to be the only entrance, or a tram.

There are many buildings, wall paintings, Buddha images, statues, and monuments in the complex. However, I chose to model only the main characteristics of the temple and left out the other detailed objects for audiences to explore when they actually visit Thailand.

I started off by modeling the chedi in high detail using levels of extrusion, but it looked too dense (Fig. 4).

Then, a few versions of chedi were made in a search for the best representation of form and shape (Fig. 5).
Next, I modeled the temple complex (Fig. 6) using reference images of the front view. I devised a different, more efficient workflow for these elements by creating every piece separately. It worked better within the context of the way I intended to animate them. My revised workflow had a positive impact on the render times. With the lower number of polygon count, the software takes less time to calculate.

Fig. 6. Nonthawan Pisessith
Temple Complex, 2014
Autodesk Maya, 1920 x 1080
I originally used the *Landscape Object* tool in Cinema 4D to create the mountain. I made several mountains and played around with the Object Properties: Rough Furrows, Fine Furrows, Plateau Level and particularly Seed to get different results of generated landscapes. I tiled them together to create mountain ranges (*Fig. 7*).

![Fig. 7. Nonthawan Pisessith Mountain Ranges, 2014 Maxon Cinema 4D, 1920 x 1080](image)

After I met with my advisors, they suggested an idea of having a road on the mountain and cars driving toward the temple. I took that into consideration and redid the mountain. The mountain ranges I made originally were used in the later scene when the train is passing by.

This time, I made one huge mountain using the *Landscape Object* tool. I converted it to the editable mode and went further with the new sculpting feature in Cinema 4D to add more details. Then, I used the *Extrude* tool with an expectation that once I created the road and used *Boole* tool, it will subtract the road’s geometry onto the mountain. However, I realized that the *Extrude* tool in Cinema 4D is different from Maya. It creates a hole inside an extruded object. So, my solution was to export the sculpted mountain as a .obj file to Maya and extruded it there. It worked, but there was one drawback. The file size became a lot larger.
The road was modeled in Cinema 4D by using the **Bezier Spline** tool. Then, I used the **Project** tool under Mesh menu > Spline > Project to project the spline onto the mountain surface. I noted that there needs to be vertices along the spline. More vertices result in more accuracy. Next, I lofted the spline with **Rectangle Object** located under Spline menu, pressed **Make Editable**, and selected the parent and child of the lofted object, right mouse button clicked > Connect Objects + Delete. One last step is to go to Simulate > Cloth > Cloth Surface and make the lofted object its child. I then changed the Object Properties: Subdivisions to 3 to add a clean subdivision evenly.

Exclusively in Chiang Mai, red Songtaew (means two rows) is the most common transportation for both locals and visitors to get around the city or a trip up to Doi Suthep. It is Chiang Mai's taxi service that is adapted from a pickup truck with a canopy and two rows of bench seats. To model them, I used reference images of the front view, side view, and top view of the truck. Once the car was completely modeled, I combined every part as one single object and used Maya's **Lattice** tool, under the Create Deformers menu, to adjust the overall form for a more cartoonish style (Fig. 8).

![Fig. 8. Nonthawan Pisessith Red Songtaew Model, 2014 Autodesk Maya, 1920 x 1080](image-url)
Fig. 9. Nonthawan Pisessith
Red Songtaew on the Road, 2014
Autodesk Maya, 1920 x 1080
Naga, the seven-headed serpent that sits inside Makara’s mouth, the Hindu mythological sea creature, was modeled in Maya with a very low-poly to start off. I developed several versions along the way, so that when I made mistakes, I could go back to the previous version (Fig. 10). I duplicated the serpent’s head, again using the Lattice tool to alter the overall appearance. Once I finished modifying three heads, I mirrored them with the pivot point located at the center of the main Naga’s head to create a symmetrical copy.

The staircase was built in Cinema 4D. I made two Circle Objects under the Spline menu; one circle was bigger but shared the same center point, and then I selected Make Editable and Connect Objects + Delete. In the Object Properties’ Object tab, the Close Spline is checked. Then, I created a curvy Bezier spline. I selected the Sweep feature and made the circle and Bezier spline its children in exactly this order to generate Makara’s body from those splines (Fig. 11). Under the Object Properties’ Object tab, Start Growth allows you to create a sweeping object easily using keyframes animation.

The Bezier spline is used multiple times for Makara’s back details. I projected the spline onto the sweep body. The Cloner tool was used to create copies of the back piece. For the Cloner, Start functions as a tool to create sweeping animation.
Fig. 12. Nonthawan Pisessith
Naga Model, 2014
Autodesk Maya, 1920 x 1080
The last object to model for this scene was the train (Fig. 13). It functioned as a transition from North to Central Thailand. I used the extruding workflow and *Lattice* tool in Maya to create and deform the object. Each piece was modeled separately, in case some details that were not necessarily seen through the camera could be taken out. The model contained basic polygonal shapes. *Helix* polygonal primitive was very useful for creating a part of the train’s engine. When exporting this model to Cinema 4D, I realized that there was an issue with the sections on which I used the Maya’s *Boolean* tool. The geometry got corrupted when exporting to Cinema 4D, leading to my decision to create the Booleans in Cinema 4D.
Bangkok, the capital of Thailand, located in the central region, is a major financial and business hub in Southeast Asia. It is one of the world’s best tourist destinations. The city is famous for nightlife, dining experiences, shopping, and sightseeing attractions such as temples, palaces, and museums.

For my project, I chose to introduce Bangkok with the cityscape at night depicting two skyscrapers; Baiyoke Tower I and Baiyoke Tower II and the Rama IX Bridge, the main route to the southern region.

Baiyoke Tower II is Thailand’s tallest building, and the Baiyoke Sky Hotel, located inside the building, is the tallest hotel in Southeast Asia. Baiyoke Tower I, located about two blocks away, is a white building with rainbow pattern balconies. It was the tallest building in Thailand from 1987 to 1993.

Rama IX Bridge was named in honor of King Bhumibol Adulyadej (King Rama IX)’s 60th birthday. It was the first cable-stayed bridge over Chao Phraya River, which is a major river in Thailand.

In term of modeling, I purchased Greyscalegorilla’s City Kit to leverage the modeling time. The kit provides three options; City_Rig_Day.c4d, City_Rig_Night.c4d, and Cement_Ground.c4d. I chose the night scene because the buildings’ windows are already textured, and I could modify them from there. The cityscape is scripted with Xpresso to generate buildings. If I were to take one building out, that space will be filled with another randomly generated building. Although I could customize the settings to contain my own skyscrapers within the kit, I could not position them at the exact location I wanted. For this reason, I selected the layer called “Buildings” located inside City_Rig_Night, and pressed Make Editable. It allowed me to select certain layers and bypass the automatic generating function, enabling me to edit the layers manually.
The bridge and skyscrapers were modeled in Cinema 4D. For Rama IX Bridge (Fig. 14), I used the **Bend** deformer tool to curve the road on the bridge. Objects that are positioned inside the Bend deformer’s bounding box also get influenced.

Baiyoke Tower I was a combination of different sizes of cubes. Since the balconies were identical, I used the **Cloner** tool to create copies of those cubes and aligned them on the Y-axis.

Baiyoke Tower II, although it has a more complicated structure, most of the components are identical. I created one face of the building and made duplications for the other three sides. I used the **Knife** tool to create diagonal edge on each face, then applied the **Atom Array**, located under Create > Modeling > Atom Array. It automatically turned edges into solid stripes (fig. 15).
Fig. 16. Nonthawan Pisessith
*Baiyoke Tower I & II Model, 2014*
Maxon Cinema 4D, 1920 x 1080
There were three car models used in this scene (Fig. 17). The BMW model was a free model that I downloaded from the Digital Tutors course *Photorealistic Vehicle Rendering in Maya*. I modified its look to fit with my thesis’s visual style. The other two models were customized from the car model used in the Northern scene.
Southern Thailand is well-known for its beautiful beaches and islands. The Similan Islands, a group of islands in the Andaman Sea, is one of the top ten destinations to visit in the world according to National Geographic. It represents the best diving site in Thailand. The sea is filled with rock formations, coral reefs in different forms, and a variety of marine life.

I started off with the boat model (Fig. 18). It acted as a connection from the city to the South. It consisted of repetitive forms of geometry. The sea anemones were generated in Maya. The software offers various preset models using the **Paint Effect** tool. The presets are located in Window > General Editors > Visor.

---

Objects in this scene besides sea anemones were sculpted from low polycount mesh. I used spheres as a base model for islands. Coral, the whale shark, and the Bigeye Snappers were first modeled in low-poly, then more details were added by sculpting (Fig. 19).
Fig. 20. Nonthawan Pisessith
*Underwater Scene*, 2014
Maxon Cinema 4D, 1920 x 1080
Texturing

I initially tested the texturing style in Maya. I did the UV layout and used shading networks to customize the look (Fig. 21). I realized later that I would have to do the textures again, since I wanted to do animation in Cinema 4D, and the software has a different process of texturing. Cinema 4D has a simpler method of assigning textures to surfaces, one that does not require the kind of UV layout necessary in Maya. Since I was ultimately going to animate in Cinema 4D, I was able to export the models from Maya without a UV layout, and take advantage of Cinema 4D’s simpler methodology.
I made most of the textures simple, one color shader with no specular highlights to get a flat, matte-characteristic look throughout the piece. I added gradients to some textures to make them look more exciting (Fig. 22).

Textures for the temple’s components were created in more detail because Thai temples are very decorative and intricate. Although I wanted to create a modern-looking style, I wanted to portray a hint of the original pattern. In Cinema 4D, the Tiles texture was particularly useful to achieve the look.

The body pattern for Naga (the seven-headed serpent) was created using layers of tiles (Fig. 23). I selected Create > New Material in the shading panel. Then, I went to Color > Texture option, selected Layer. After I opened up the Layer, I selected Shader… > Surfaces > Tiles. Fig. 24 shows my customization. I went back one level and changed the opacity to 83%.
Then, I added another layer of Tiles on top and changed the properties as shown in Fig. 25. I changed the color mix mode to Difference with 42% in opacity.

I made a Gradient layer on top. The gradient goes from black to pale blue with the Type selected as 3D – Linear (Fig. 26). I changed the color mix mode to Subtract with 49% in opacity.

Then I added Effect... > Hue / Saturation / Lightness and Brightness / Contrast / Gamma on top to change the overall colors. The final step was to add Effect... > Transform with 45 degree in Angle. Fig. 27 shows the order of layers.
Makara’s head pattern was a copy of Naga’s texture except for both of the Tiles’ patterns use Circles 2. Makara’s body on either side of the staircase used Tiles with the setting shown in Fig. 28.

I learned how to use BodyPaint 3D software that is included in Cinema 4D through Digital Tutors course *Creature Creation in CINEMA 4D*. It allows me to paint directly on the model. However, the UVs need to be laid out properly in the beginning. So, I did the UV layout and the painting within the BodyPaint 3D interface for my whale shark, Bigeye Snappers, and islands sculpted models.

Once that is completed, I switched to the Sculpting layout and pressed *Bake Sculpt Objects* (Fig. 29). For the Source Object, I chose the highest level, and for the Target Object, I tended to choose either Level 0 or Level 1. By baking the sculpt layers into Normal and Displacement maps, I was able to render low-resolution geometry that contains the details of its higher-resolution counterpart through the use of maps that give the illusion of high-density detail.
Besides the sculpted objects, displacement was used for the mountain and ocean textures to add the roughness. I limited the use of displacement to those textures that truly need it since it is rather render expensive.

Frequently, when creating a tide formed by a boat, the technique that people tend to achieve is to make the boat collide with the ocean surface through the use of Collision deformer. I originally went in that direction. However, my scene contained many objects and the boat has another deformer included, so these circumstances made the render time become much slower. Then, I found an alternative approach on Vimeo called Cinema 4D Tutorial – Bow Wave. I tested out this technique and it decreased the incremental time required to render to twice as fast per frame.

What I did was create a 2048 x 2048 pixel light gray artwork area in Photoshop. Then, I drew the tide in black and saved it as a TIFF file format (Fig. 30). I created a new material with the Displacement selected. In the Displacement tab, I changed the Height to 15 cm and selected Fusion in Texture option. I went inside Fusion one level and selected the tide image I have just created for the Base Channel. For the Blend Channel, I selected Noise and customized the setting so that the texture is animated automatically and in loop as shown in Fig. 31. I changed the Blend mode to 50%. Lastly, I made the ocean plane move along with the boat. Nonetheless, there is one disadvantage with this technique as noted in the video’s description: the boat has to move in a straight line only.
Lighting was one of the most difficult concerns I had for this project since I only had experiences with lighting techniques for still images. I was struggling with how and where to position light sources so that objects within a scene were lit properly and consistently had a decent look in every direction the cameras traveled. I decided to use Physical Sky as a main light source throughout the project. It simulates realistic outdoor illumination with the ability to set up the time, date, and location of the scene. I used it to make an animation of time change gradually between scenes. Other types of light source were manually positioned to enhance certain looks.

In the Northern scene, I added a yellow omni light over the mountain and a pale orange omni light over the staircase to create a warm temperature contrasting with the blue sky. I applied a three point lighting system, a key light, a fill light, and a rim light, to Naga figures (Fig. 32).

Fig. 32. Nonthawan Pisessith
Northern Scene Lighting, 2014
Maxon Cinema 4D, 1920 x 1080
For the city scene, I used multiple colors of spot lights to create a nightlife atmosphere. The two towers, Baiyoke I and Baiyoke II were emphasized by the use of brighter spot light. It made the towers stand out from the environment but within a limited color range (Fig. 33).

For the Southern scene, I made a keyframe animation of changing in Sky’s gradients and some of the city’s lighting to a light blue color to create a seamless transition from night to day. The school of fish scene used three target lights with the three point lighting system. Target lights automatically follow the specified object as they move. The underwater scene had one spot light facing the scene from the same position as the camera. One target light is placed over the whale shark and another one underneath, following the whale shark (Fig. 34).
Animation

From the beginning, I wanted to make a similar animation style as the *Game of Thrones* title sequence. It has a very mechanistic movement. One of my advisors showed me how to create that look in Maya using *Blend Shape*. This technique required two sets of models, and they both needed to have the same number of vertices to start with. Once two models were created, I selected the models in order. The first one was the base object and the second one was the target object. I selected Create Deformers > Blend Shape.

*BlendShape1* will be displayed automatically in the Channel Box under Inputs. From here, I could make a keyframe animation of zero or one value in Envelope. I noted that should not delete the history because it will remove all of the animation created with that object. After I tested the Blend Shape animation with my temple, I realized it looks too mechanical and it was hard for me to control the timing of the animation since I have to animate each piece individually.

I changed my animation idea to a pop up style using keyframe animation. I used *Align to Spline* tag to control the direction of the moving objects. This was done by creating a spline, then select the specified object, right mouse click, select CINEMA 4D Tags > Align to Spline. In the Spline tag properties, put the spline in the Spline Path slot.

I came across two presets that saved me time to create some animation. I used these presets to create an unfolding temple floor, animate the buildings pop up and parts of the bridge grow.

Step Motion preset is available to download through http://www.oinon.net/blog/preset-step-motion-ver-1-2p/. This preset offers six animation effects; domino, pop, head up, unfold, bubble, and grow. I can customize my own setting manually through selecting scale (X, Y, Z) or Rotation (H, P, B).
Fig. 35 shows the interface of the preset. To use this preset, select the layer from the Objects tab and put it in Start Object slot. Once an animation effect is selected, the animation is then created. I could change the start time, the speed of the animation, and other features.

Another preset is called rown-POLY. It is a powerful and time saving tool. It works very well side-by-side with the Step Motion preset. It allows for quickly setting up polygons to be ready for an unfolding effect. The link to download this preset is http://dl.dropbox.com/u/34313261/rown_POLY.zip. Once I finished downloading, I put everything that comes with the preset in Application > Cinema 4D R15 > Library > Scripts folder. When I opened the .c4d file, the tools’ icons were displayed in the tool bar (Fig. 36).
There were two models that needed to be rigged, the whale shark and the Bigeye Snappers. I watched the Digital Tutor’s *Beginner’s Guide to Rigging in Cinema 4D* course. I attempted to use the auto Character animation feature offered in Cinema 4D but I struggled with making fish move naturally. Then, I found a great approach, using a combination of basic joint tool and mesh deformer, called *Cinema 4D Easy Fish Swimming: Mesh Deformer*. The tutorial is demonstrated in Japanese interface but the tools are organized in the same way as an English interface.

To achieve this technique, firstly, I went to Character menu, I selected *Joint* and created nine connecting joints that stay within the fish body as shown in Fig. 37.

When finished, I right mouse clicked at the first joint in the Objects tab and selected Character Tags > IK. In the IK tag properties, Under Tag tab, I selected the last joint and put in End slot. Under Dynamics tab, I checked Enable and scroll down to Forces option, I changed the gravity to 0 cm (*Fig. 38*). I had to make sure joints were aligned at the center of the fish.
I created a cube with subdivisions to cover the entire fish (Fig. 39). I pressed Make Editable. Then, I selected the cube and the first joint and went to Character > Commands > Bind. Next, I went to Create > Deformer and selected Mesh. I made Mesh a child of Fish group, went to Mesh Object Properties, dropped the cube in Cages slot and pressed Initialize (Fig. 40). These steps allowed the object that was contained inside the cube to move along with the cube and joint.

I selected the first joint in the chain, right mouse clicked and selected Group Objects. Once the group was created, right mouse clicked and selected CINEMA 4D Tags > Vibrate. This automatically created an animation of fish swimming. I checked Regular Pulse and Enable Rotation. Then, I changed the value of Amplitude’s first slot and Frequency to fit the type of fish (Fig. 41). Amplitude controlled how far of the angle the fish body will swing. Frequency controlled the speed of the fish moving.

Also, in the IK tag properties, again, under Dynamics tab, I modified the Strength to control the stiffness of the fish when swimming.

When I followed the tutorial the first time, I had an issue with my fish animation. The other parts that are modeled separately from the body look fine when I made a preview render but they did not attach when I made a final render. I solved this by selecting every part of the fish, right mouse clicking and selecting Connect Objects + Delete. Then, I redid the entire animation again. I initially used particles to generate the school of fish. However, the rigged animation of fish swimming did not play. So, I ended up not using the particles idea, but rather placed copies of the rigged fish in the scene manually and made them move along a spline.
Rendering & Compositing

For rendering, I used Linear Workflow with sRGB Input Color Profile. I outputted as image sequences for HDTV 1080 29.97 (1920 x 1080 pixels) at 72 dpi in PNG format with the depth of 16 Bit/Channel. Anti-Aliasing was set to best with the Min Level of 1x1 and mainly Max Level of 2x2, but some scenes were at 4x4. The Anti-Aliasing setting for the city scene is different from the rest because of the Greyscalegorilla’s City Kit textures. Those models that were displayed in the distance appeared to flicker. So, I set the Threshold to 0% and MIP scale to 200% as suggested in the Greyscalegorilla’s forum.

I created a Multi-Pass render with the selection of Shadow, Ambient Occlusion, and Depth. I applied only Ambient Occlusion and Shadow passes for the first scene as I could not get the depth of field to work correctly throughout the camera moves. Instead, I separated objects into layers and rendered with Alpha Channel selected (Fig. 42).

For the post production, I composed the Ambient Occlusion and Shadow passes in Multiply mode on top of the Beauty pass in Adobe After Effects. I used the Camera Lens Blur effect and assigned the Depth pass in the Blur Map > Layer. I applied a paper texture image on top in Divide mode. Particles, light ray, and waving water effects were created in post for the underwater scene. I originally attempted to mix Thai instruments sounds with a royalty free song online. I was not satisfied with the result. Therefore, I contacted a Thai music composer to produce the audio and sound effects that were used throughout my thesis project.

Fig. 42. Nonthawan Pisessith
Compositing Layers, 2014
Adobe After Effects, 1920 x 1080
Branding

Fig. 43. Nonthawan Pisessith
*Branding Concepts*, 2014
Pen Medium, 8.5 in x 11 in
The original concept for my thesis branding design was a paper-opening style logo that forms into a U shape from “Unfolding” (Fig. 44). However, my animation style was changed from a paper unfolding technique to a pop up animation of 3D models. Moreover, I felt that the icon was too generic and did not symbolize Thailand.
I redesigned the branding depicting chedi (Fig. 45), part of the temple, to be an iconic representation since it was also displayed in my thesis. I colored chedi in gradients to create an illusion of paper crease and at the same time the logo has a somewhat three dimensional look. I chose Montserrat typeface for the logotype with the word unfolding in lowercase and Thailand in uppercase. It has a bold and modern look that reflects my animation style. The logotype was aligned center to mirror the chedi. Montserrat typeface is available to download at http://www.fontsquirrel.com/fonts/montserrat.
In addition, I wanted to incorporate Thai pattern to the opening and closing scenes’ poster cover. I developed several designs in Adobe Illustrator and tried them on in the actual scenes (Fig. 46). I ended up choosing the very simple pattern as it matched the shape of the logo as well as allowed the logo to be the dominant object (Fig. 47).
Imagine RIT was an ideal event to conduct the user testing. I made a survey with eight questionnaires regarding my work-in-progress thesis animation. By that time I had only finished the Northern scene and a transition to the city. I printed out images of the locations I had already created in colors for those who have never been in Thailand to compare it to my actual models. I received great feedback from various groups of the intended target audience. There was one individual who visited Thailand seven years ago. She went to the temple that I had in my first scene and she still remembered the place and could tell right away where the place was located even though my project visual is stylized.

In the summer, I went back to Thailand. I visited the temple and had a chance to show my animation and get feedback from many locals, who live in that area and those who were on a trip, as well as some tourists. I did the review in a form of quick conversation. I was pleased that every Thai person I asked recognized the place.

I took the feedback into consideration and made refinements for improvements. I revised the pacing of the camera, the movement of the red cars, and the shadow on the staircase. Many audiences wanted to view the Naga figures longer, so I slowed down the camera when it was moving down the staircase and also in the close up shot. I adjusted keyframes for the red cars as one person mentioned that it stopped too long before they started moving. Last, I reworked the lighting in the staircase shot. Some of the details were lost because the shadow was too dark.
# Unfolding Thailand Thesis Survey

_Nonthawan Pisessith_  
Rochester Institute of Technology  
School of Design  
MFA Visual Communication Design

## Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>Male</td>
<td>US</td>
</tr>
<tr>
<td>18-25</td>
<td>Female</td>
<td>Thai</td>
</tr>
<tr>
<td>26-30</td>
<td></td>
<td>Other ______</td>
</tr>
<tr>
<td>31-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Have you ever been to Thailand?**  
○ Yes  ○ No

## Questionnaires

After watching the Unfolding Thailand video, please select the number that matches your feelings best  

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Disagree 1 2 3 4 5 Agree</td>
<td></td>
</tr>
<tr>
<td>1. The style is consistency throughout</td>
<td></td>
</tr>
<tr>
<td>2. Models represent the locations</td>
<td></td>
</tr>
<tr>
<td>3. Animation is interesting</td>
<td></td>
</tr>
<tr>
<td>4. Animation's speed is about right</td>
<td></td>
</tr>
<tr>
<td>5. Camera movement is intriguing</td>
<td></td>
</tr>
<tr>
<td>6. The use of color is effective</td>
<td></td>
</tr>
<tr>
<td>7. Interestingly representing the locations</td>
<td></td>
</tr>
<tr>
<td>8. Inspires you to visit the locations</td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Comments**  

Greets 1st - Visit a little first moving in Dragon Sculpture (P3N)  
May have the construction of structure intricate - The animation is beautiful and filled with detail that I personally love to see! View is similar.
# Unfolding Thailand Thesis Survey

**Nonthawan Pisesith**  
Rochester Institute of Technology  
School of Design  
MFA Visual Communication Design

## Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Under 18</td>
<td>○ Male</td>
<td>○ US</td>
</tr>
<tr>
<td>○ 18-25</td>
<td></td>
<td>○ Thai</td>
</tr>
<tr>
<td>○ 26-30</td>
<td>○ Female</td>
<td>□ Other</td>
</tr>
<tr>
<td>○ 31-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>○ 36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Have you ever been to Thailand?  
○ Yes  □ No

## Questionnaires

After watching the Unfolding Thailand video, please select the number that matches your feelings best  

e.g. Disagree 1 2 3 4 5 Agree

1. The style is consistency throughout  
   Disagree 1 2 3 4 5 Agree

2. Models represent the locations  
   Disagree 1 2 3 4 5 Agree

3. Animation is interesting  
   Disagree 1 2 3 4 5 Agree

4. Animation's speed is about right  
   Disagree 1 2 3 4 5 Agree

5. Camera movement is intriguing  
   Disagree 1 2 3 4 5 Agree

6. The use of color is effective  
   Disagree 1 2 3 4 5 Agree

7. Interestingly representing the locations  
   Disagree 1 2 3 4 5 Agree

8. Inspires you to visit the locations  
   Disagree 1 2 3 4 5 Agree

## Additional Comments

Very interesting animation, I love the colors and think that the similarity to the actual place is pretty close.
Unfolding Thailand
Thesis Survey

Nonthawan Pisessith
Rochester Institute of Technology
School of Design
MFA Visual Communication Design

Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Under 18</td>
<td>O Male</td>
<td>US</td>
</tr>
<tr>
<td>O 18-25</td>
<td>O Female</td>
<td>O Thai</td>
</tr>
<tr>
<td>O 26-30</td>
<td></td>
<td>O Other</td>
</tr>
<tr>
<td>O 31-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O 36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you ever been to Thailand?  O Yes  O No

Questionnaires
After watching the Unfolding Thailand video, please select the number that matches your feelings best

<table>
<thead>
<tr>
<th>e.g. Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The style is consistency throughout</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>O 5</td>
</tr>
<tr>
<td>2. Models represent the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>O 5</td>
</tr>
<tr>
<td>3. Animation is interesting</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>O 4</td>
<td>5</td>
</tr>
<tr>
<td>4. Animation’s speed is about right</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>O 5</td>
</tr>
<tr>
<td>5. Camera movement is intriguing</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>O 4</td>
<td>5</td>
</tr>
<tr>
<td>6. The use of color is effective</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>O 4</td>
<td>5</td>
</tr>
<tr>
<td>7. Interestingly representing the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>O 5</td>
</tr>
<tr>
<td>8. Inspires you to visit the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>O 5</td>
</tr>
</tbody>
</table>

Additional Comments
LIKE THE STYLE OF TEMPLE ANIMATION. IT SHOWS THAT YOU SPENT THE MOST TIME ON IT. I LIKE THE STYLE AND FUN ANIMATION. WOULD LIKE TO SEE MORE WORK ON THE CARS AND ROAD.
Unfolding Thailand

Thesis Survey

Nonthawan Pisessith
Rochester Institute of Technology
School of Design
MFA Visual Communication Design

Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Under 18</td>
<td>○ Male</td>
<td>○ US</td>
</tr>
<tr>
<td>○ 18-25</td>
<td>○ Female</td>
<td>○ Thai</td>
</tr>
<tr>
<td>○ 26-30</td>
<td></td>
<td>○ Other</td>
</tr>
<tr>
<td>○ 31-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>○ 36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you ever been to Thailand?  ○ Yes  ○ No

Questionnaires

After watching the Unfolding Thailand video, please select the number that matches your feelings best

e.g. Disagree 1 2 3 4 5 Agree

1. The style is consistency throughout  Disagree 1 2 3 4 5 Agree
2. Models represent the locations  Disagree 1 2 3 4 5 Agree
3. Animation is interesting  Disagree 1 2 3 4 5 Agree
4. Animation’s speed is about right  Disagree 1 2 3 4 5 Agree
5. Camera movement is intriguing  Disagree 1 2 3 4 5 Agree
6. The use of color is effective  Disagree 1 2 3 4 5 Agree
7. Interestingly representing the locations  Disagree 1 2 3 4 5 Agree
8. Inspires you to visit the locations  Disagree 1 2 3 4 5 Agree

Additional Comments

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
# Unfolding Thailand Thesis Survey

## Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>Male</td>
<td>US</td>
</tr>
<tr>
<td>18-25</td>
<td></td>
<td>Thai</td>
</tr>
<tr>
<td>26-30</td>
<td>Female</td>
<td>Other</td>
</tr>
<tr>
<td>31-35</td>
<td></td>
<td>China</td>
</tr>
<tr>
<td>36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Have you ever been to Thailand?

- Yes
- No

## Questionnaires

After watching the Unfolding Thailand video, please select the number that matches your feelings best.

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The style is consistency throughout</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>2. Models represent the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>3. Animation is interesting</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>4. Animation's speed is about right</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>5. Camera movement is intriguing</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>6. The use of color is effective</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>7. Interestingly representing the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>8. Inspires you to visit the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
</tbody>
</table>

## Additional Comments

---

---

---
# Unfolding Thailand Thesis Survey

**Nonthawan Pisessith**  
Rochester Institute of Technology  
School of Design  
MFA Visual Communication Design

## Participant Information

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Under 18</td>
<td>O Male</td>
<td>O US</td>
</tr>
<tr>
<td>O 18-25</td>
<td>O Female</td>
<td>O Thai</td>
</tr>
<tr>
<td>O 26-30</td>
<td></td>
<td>O Other</td>
</tr>
<tr>
<td>O 31-35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O 36 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Have you ever been to Thailand?  
○ Yes  ○ No

## Questionnaires

After watching the Unfolding Thailand video, please select the number that matches your feelings best

<table>
<thead>
<tr>
<th></th>
<th>e.g. Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The style is consistency throughout</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>2. Models represent the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>3. Animation is interesting</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>4. Animation's speed is about right</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>5. Camera movement is intriguing</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>6. The use of color is effective</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>7. Interestingly representing the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
<tr>
<td>8. Inspires you to visit the locations</td>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agree</td>
</tr>
</tbody>
</table>

## Additional Comments

All questions answered. No additional comments regarding text & audio for video.
Conclusion

Unfolding Thailand was my first experience to create an animation. I spent about 10 months in total on this project. The significance of my project was to use this 3D motion graphics piece as a guide to encourage both locals and tourists to visit the locations and the country in general.

The result from the user testing both in the United States and Thailand indicates that foreigners, those who have visited and those who have never been to Thailand, and Thai people, those who have never been to those specific locations and those who actually live in the areas, are inspired to visit Thailand or those specific locations. Moreover, they welcomed the change in visual style to the existing videos.

From the technology standpoint, it was a big challenge for me to independently explore and integrate every aspect of 3D including modeling, sculpting, texturing, lighting, rigging, animating, rendering and compositing all together with my background knowledge in branding. One suggestion from a committee member that I will keep in mind for the future project similar to this thesis was that I should establish, follow, and limit my own rules of animation consistently in terms of how objects are built or revealed.

Although I spent a lot of time learning the software and trying out various techniques throughout the project, in-depth technical knowledge was not the biggest thing I gained. From working on this thesis, the aspects that I appreciated the most were the thought and work processes, ranging from planning, decision-making, organizing, problem solving, to developing workflow, pipeline, and execution. Problem solving was especially my most rewarding experience, one that will help me face future challenges within my work and my own life. I have learned that there may be many obstacles along the way to achieving success and that through problem solving, a strong thought process, and perseverance, anything can and will be achieved.
## Appendix

**Dissemination**

I will promote my motion graphics video through web sites, including Vimeo, YouTube, Behance, my personal web site www.tarpisessith.com and Facebook. I will also submit my finished project to the following publications, conferences, and competitions.

<table>
<thead>
<tr>
<th><strong>Magazines</strong></th>
<th>Communication Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer Arts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Conferences</strong></th>
<th>SIGGRAPH Annual Conference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW Design Conference</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Competitions</strong></th>
<th>Communication Arts Design Competition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SIGGRAPH Annual Competition</td>
</tr>
<tr>
<td></td>
<td>Adobe Design Achievement Awards Contest</td>
</tr>
</tbody>
</table>
Thesis Proposal

Unfolding Thailand

A Branding & Marketing Campaign Promoting Tourism

Nonthawan Pisessith

Thesis proposal for the Master of Fine Arts Degree
Rochester Institute of Technology
CIAS, School of Design
Visual Communication Design
Unfolding Thailand

Abstract

The Tourism Authority of Thailand uses linear videos as media for their annual commercials to promote Thailand. Unfolding Thailand aims to bring a new approach in promoting tourism and emotionally connect with tourists eagering them to travel by creating a visual representation of the attractions through the use of animated 3D modeling, motion graphics and print design. Three popular destinations from different regions will be presented for the audience to experience.

Situation Analysis

Thailand’s economy relies heavily on tourism. According to TIME magazine, Bangkok, the capital city of Thailand, is ranked as the most visited city in the world by the 2013 Global Destination Cities Index.\(^1\) The Tourism Authority of Thailand announced that between January and April of 2013 about 9 million trips to Thailand were booked.\(^2\) The diversity of Thailand’s range of geographical features allows tourists to enjoy various activities, from hiking adventures in the North, to embracing a mix of traditional and modern life in Bangkok, and finally to relaxing on the beach in the South. The Tourism Authority of Thailand, or known as TAT, is the organization that is responsible for Thailand’s tourism promotion. The organization has two main marketing slogans; Unseen in Thailand, aimed toward Thai audiences, and Amazing Thailand, targeted internationally.

Unfolding Thailand differs from the traditional TAT commercials in that it is meant to be a visual guide of the highlighted locations based entirely on the use of computer graphics design and is aimed towards both groups: Thai and international audiences. Nowadays, television production increasingly uses computer graphics design elements such as 3D modeling, motion graphics, and animation to create a stylized visual. This new visual style could generate interest to a wide variety of audiences with its creative and visually stimulating models as well as the story through the flow of the animation. Structures of locations will be animated, emerged and unfolded. By highlighting specific locations like Unseen in Thailand and giving more focus to the most important locations from Amazing Thailand, the Unfolding Thailand allows all types of audiences to become immersed in the visual experience of a journey throughout the country as well as create greater interest in the field of computer graphics design.


Problem Statement

Could the use of computer graphics design create an inviting visual experience to tourists?

By using only 3D elements, will the commercial attract audiences without showing actual videos and images of the travel locations?

The Tourism Authority of Thailand uses different promotional commercials to target Thais and foreigners. The Unseen in Thailand video is aimed toward Thai audiences with 3-5 specific locations giving more time and insights on each spot. On the other side, the Amazing Thailand commercial sets, targeting foreigners, promotes the country by showing a mix of traditions, cultures, places, and foods clips. These commercials try to introduce as many aspects as possible. This is not an effective way to present Thailand within a short period of time. The commercials show multiple festivals that happen throughout the year. These festivals are attractive, but only happen on a few specific times in the year. The Unseen in Thailand commercial explores many hidden locations that many Thai people would be interested in visiting. These individual locations are given abundant screen time to generate interest for the general public. The commercial has Thai narratives that would capture the interest of Thai people, but create a language barrier for foreigners. It brings an immersive experience to the viewer but would exclude foreign viewers for those areas of interests.

The Amazing Thailand commercial presents everything about Thailand including culture, festivals, traditions, locations, and activities. The wide range means that each location receives only a few seconds of screen time and audience may not get enough information to determine where these locations reside. Since most Thais are familiar with the contents of the video, the commercial would not hold their interest.

With my project, I intend to create a visual representation of three main tourist attractions where people can visit anytime during the year. I will do this by producing animated 3D modeling of unfolding and emerging structures of the three different places and have the camera moves through the scene. The 3D models will also be used in print design to promote tourism in Thailand.

The goal of the 3D-motion graphics piece is to promote tourism and emotionally connect tourists making them eager to travel. A new and innovative approach to creating commercials could refresh the interest of the audience. I believe that there is a wider audience for computer graphics design and that the audience would welcome the change in visual style to the annual videos. 3D creates more dynamic and excitement than a linear video. By designing one motion graphics piece targeting both residents and tourists, it is cost effective and this would also inspire Thai people in the use of computer graphics and would potentially lead others into this industry.
Design Ideation


Sketches
Sketches
Sketches
Past Works

This piece was created in Maya to demonstrate the use of warm and cool lighting as well as experimental with UV mapping.

Fig. 15. Nonthawan Pisessith, Lighting, 2012. 1280 x 1024px.

This concept art piece is set in the future where people live in flying ships. Everything including modeling, shading, lighting, and a 10 seconds animation are made in Cinema 4D. This piece illustrates the visual style I would like to approach for my thesis.

Fig. 16. Nonthawan Pisessith, Flying Ship, 2012. 8.5 x 11in.
Unfolding Thailand

This piece was produced in the Production Pipeline course with the concept of animal extinction. It demonstrates the workflow that I would like to pursue for my thesis.

Base modeling of the elephant was made in Maya software, then export it into Cinema 4D to make gears inside and sculpt the details on the elephant's skin. The animation of moving gears and camera moves around the elephant are made in Cinema 4D.

Finally, two sets of 600-frame images were rendered out; one with beauty pass and one with only ambient occlusion pass. The images were brought into Adobe After Effects to layer and stitch the images, add the audio, and additional text.

Fig. 17. Nonthawan Pisessith, Mechanical Elephant, 2013. 800 x 600px.
This scene is created with the purpose of exploring the use of colored lights to achieve the balance between warm and cool temperatures.

This project demonstrates the use of shading networks; 2D and 3D render nodes to create procedural shading. The final image is rendered with Mental Ray using final gather and ambient occlusion pass for more realistic shadows.

Fig. 18. Nonthawan Pisessith, Mysterious Night, 2012. 1280 x 1024px.

Fig. 19. Nonthawan Pisessith, Snail, 2013. 1280 x 1024px.
The focus of the project is to create a complex structure through the use of geometrical compositional structure. Therefore, I chose to illustrate Thai traditional architecture for this project.

Fig. 20. Nonthawan Pisessith, Waterside, 2013. 1280 x 1024px.
Survey of Literature

My research focuses on looking at multiple visual inspirations, different technical aspects, and information for my subject matter. I looked into different styles and techniques of creating the visual 3D modeling, cinematography, and animation; ranging from low-high poly modeling, flow of the motion, and style, which present traditional Thai design to a new audience.

The title sequence for the Game of Thrones is one of the biggest inspirations for my thesis. I searched through several Vimeo videos for commercials that also use 3D modeling and motion graphics, some of which were awe-inspiring and impressive. These include: Gaian Project, CCTV, General Electric’s Naive, and Mazda.

Moreover, the research looks into a variety of technical software used to create the project (Cinema 4D, Autodesk Maya, and Adobe After Effects) as well as various locations available for the project. Each of the location is from different part of the country and using the idea of transportations to create a transition between them.

Design

Moving Graphics: New Directions in Motion Design

This book showcases the latest motion graphics works created by some of the world’s leading studios. Description and concept are written for each project, giving the audience their thought-processes behind their works. Various works and different visual styles presented in this book are the stimulants for ideas for my projects.

Elastic: Game of Thrones
http://motionographer.com/theater/elastic-game-of-thrones/

This is a document of an interview with Angus Wall, the director of the Game of Thrones title sequence. He revealed the production process - from sketching, concept art design, to some techniques that were used to create the 3D virtual map of kingdoms. This article gives me a better understanding of how the piece is created. The title sequence inspired me to create something with a similar concept but for Thailand. I feel that the concept and the flow of the motion are particularly fascinating and influential.
Gaian.me – Official Trailer 2012  
Steffen Knoesgaard  
http://www.vimeo.com/49594235  

This trailer is produced for the 2012 Gaian Project. It is a digital media based community that creates works influenced by nature. The commercial is very inspiring and incredibly done using 3D low-poly modeling technique. The use of bright colors makes the piece looks lively and interesting. The animation and movement between scenes are very smooth. This work is a great example of motion study in which I want to create a similar style of model and flow in my thesis.

CCTV Ink  
Troublemakers.tv  
http://www.vimeo.com/6794856  

An opening for China Central Television is another effective and well-communicated piece. It portrays traditional-to-modern China history through the use of ink effect. Iconic symbols such as fish, crane, dragon, mountain scene, the Great Wall, train and buildings are presented. The audio raises audiences’ excitement, while capturing the essence of China. The storyboard is well thought out. These aspects are very essential to my thesis, because I wanted to promote iconic attractions in Thailand through a short commercial clip with quintessence of Thai culture and design.

Naive – Curing  
Naive  
http://www.vimeo.com/54020998  

This commercial for General Electric China is a great inspiration for the use of 3D and motion graphics. The paper texture makes the piece looks more realistic. The animation technique, where parts of objects are emerged and unfold, is what I want to achieve for my thesis.

Mazda 'Incredible World' Director's Cut  
Eric Lane  
http://www.vimeo.com/57358679  

The 2013 Mazda CX-9 commercial uses a combination of 3D modeling of various landscapes, motion graphics of landscape eroding, and an actual footage of a family in the car. The 3D elements have illustration-style texture, giving a new look to an automotive commercial industry.
This online version of Autodesk Official book is written for beginners in Maya software. It covers features and capabilities of the software including: the workflow, software interface, basic modeling techniques, texturing, lighting, animating, rendering and compositing. The book provides a basic starting point for my research. It helps me determine the appropriate techniques to create intricate patterns and complex structures, such as the use of subdivision surfaces modeling and proper way to layout the UVs.

Urban Environment Creation in Maya
Digital-Tutors

This course introduces 3D environment modeling workflow with texturing and UV Mapping techniques, which are suitable for game industry, film production, and architectural visualizations. This course teaches me the amount of required details I should expect to have to create an exceptional model and how to layout UV mapping and apply textures.

Sculpting Workflows in CINEMA 4D
Digital-Tutors

CINEMA 4D R14, the most up-to-date software, has a sculpting feature similar to ZBrush and Mudbox. This course gives users an understanding of each sculpting tool, brush settings, stamps and other functions. With the sculpting function built in, I should be able to create details to objects and do the animation and/or motion within single software.

Introduction to Animation in Cinema 4D
Digital-Tutors

This course teaches users basic animation techniques in CINEMA 4D, using keyframe, F-curve, and Xpresso. Path animation, edit and blend animation, bake motion and optimize data are also covered. The techniques that I have learned through this research could improve the motion in my project by making it possible to create a smooth and flow animation.
Quick Start to After Effects: Volume 3
Digital-Tutors

This course covers important techniques and tools in After Effects. Variety methods are demonstrated; working with images, vectors, footages, and effects to create motion graphics piece. The course is a quick introduction from the basic to advance techniques in using the software. It covers a variety of aspects that could improve my thesis.

Subject Matter

DK Eyewitness Travel Guide: Thailand
Philip Smith, Philip Blenkinsop

In addition to photographs of attractions, festivals, list of the best hotels, shops, bars, and restaurants in Thailand like many travel guides, DK Eyewitness Travel Guide: Thailand shows Bird’s-Eye views of locations and street-by-street maps of complex sites. With the unique top view maps and illustrations, this guide makes it easier to visualize and create the details in my model. The guide also provides other information about the attractions and festivals that could potentially add more aspects to the subject matter.

The Arts of Thailand
Steve Van Beek, Luca Invernizzi Tettoni

This book covers Thai arts and architectures as well as the history from different period; prehistoric to Rattanakosin (Bangkok). It includes pictures of work from painting, sculptures, building, and wall murals. These works are the traditional design presented in Thai arts and I plan to incorporate a different styling of these works into my project, giving the traditional styling a modern twist.

Always Amaze You - Thailand Tourism
http://www.youtube.com/watch?v=Ok3HxW8jHYw

This is the most recent commercial produced by Tourism Authority of Thailand. It captures the tradition and festivals that happens throughout Thailand. This commercial also displays the traditional way of how Tourism Authority of Thailand creates their commercial using only basic video clips. I could look at the flow of this commercial and try to create something similar. My thesis would incorporate many of the traditional design.
Chiang Mai: Doi Suthep
Benjamin Malcolm
http://www.thaiwave.com/benjarong/beyondphuket/doisuthep.htm

This website includes photos and historical information about Doi Suthep. The information could be added to my thesis, providing a background of Doi Suthep and other informative facts such as the size of the temple or the number of species of birds in the area. Tourists would have a better understanding of the location and be aware activities they could do in the area. I could include these activities into the flow of my commercial.

Wat Phra Kaew, Bangkok
Holly Hayes

This website is an introduction to Wat Phra Kaew. It provides a history on the Emerald Buddha and the culture and tradition around it. The site gives me details in text on a different styling of each building, ranging from Ayutthaya, Lanna, and Angkor. This could add the details into my thesis.

Phi Phi Islands, Thailand
Will Klass
http://www.travelchannel.com/interests/beaches/articles/phi-phi-island-thailand

This website gives the information on traveling to Phi Phi Island. I plan to use some of this mode of transportation to the island as the transition between the different locations. The different types of transportation could be used throughout the video to create the flow from the north, to the central, and towards the south.

Many commercials are increasingly using computer graphics design in getting consumers interested in their products. I believe that creating a commercial using 3D modeling and motion graphics for Thailand would attract a large number of viewers. The Tourist Authority of Thailand uses series of video footages to create commercials. By using computer graphics technology, the results would be more creative and appealing compared to previous commercials. The source that is most influential to me is the Game of Thrones title sequence. It is what inspired me to work on my thesis in this direction. Other sources of information, like Gaian Project, help me with visualizing my concepts and give me a sense of how my project should flow.
Methodological Design

Approach

1. Research top three attractions from different regions; North, Central, and South as well as technical aspects of the animation and cinematography.

2. Create brand identity for the print and motion advertisements.

3. Develop a storyboard and sketches of elements that need to be modeled.

4. Create 3D models of the attractions and other supporting elements, such as different transportation for transition from place to place.

5. Animate structures of the attractions and camera movement throughout the scene and render out frame-by-frame images.

6. Insert typography, audio and make a final retouch to the video.

7. Composite the rendered images in Photoshop to create a poster.

Target Audience

The specific target audience for my thesis will be both male and female local Thai residence and international audiences from 18-35 years old. This age group covers from college students who would travel with friends, family traveling, to working people who are looking for a special place for vacation.

Software

Autodesk Maya
Cinema 4D
Adobe After Effects
Adobe Photoshop
Adobe Illustrator
Garage Band

Deliverables

There will be eight main models in total for my thesis including a mountain scene, three attractions, three transportations, and a whale shark. The modeling techniques I considered using are NURBS and polygon modeling. The piece will show attractions from the north, the central, and to the south of Thailand. Transportations will be used to connect the three attractions. The final outputs will be a full HD QuickTime movie format as well as a poster to promote the video.
Storyboard
Asset List of Attractions

Fig. 21. Nonthawan Pisessith, Doi Suthep, Photograph, 2013.


Fig. 23. Nonthawan Pisessith, Koh Samui, Photograph, 2013.
Poster Design
Implementation Strategies

I plan to create a 2-minute Full HD (1920x1080) motion graphics video along with logo and poster design to showcase the three main Thailand travel destinations. The modeling will be accomplished by using Autodesk Maya software. Animation and cinematography will be created in Cinema 4D. Garage Band will be use to make an appropriate edit purchased sound effects to match the animation. The whole piece will be put together in Adobe After Effects software to create the final deliverable. Each location’s name as well as background music will be added. For the poster, I will use Adobe Photoshop to composite my rendered images. Lastly, the logo for Unfolding Thailand will be designed in Adobe Illustrator and will be incorporated into both the video and the poster design.

Dissemination

**Approach**
I will promote my motion graphics video through web sites, including Vimeo, YouTube, Behance, my personal web site www.tarnpisessith.com and Facebook. I will also submit my finished project to the following publications, conferences, and competitions.

**Magazines**
- Communication Arts
- Computer Arts

**Conferences**
- SIGGRAPH Annual Conference
- HOW Design Conference

**Competitions**
- Communication Arts Design Competition
- SIGGRAPH Annual Competition
- Adobe Design Achievement Awards Contest

Pragmatic Considerations

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis show promotional posters</td>
<td>$100</td>
</tr>
<tr>
<td>Competition entrance fee</td>
<td>$200</td>
</tr>
<tr>
<td>Publishing (proposal and final bound copies)</td>
<td>$100</td>
</tr>
<tr>
<td>Background music</td>
<td>$40</td>
</tr>
<tr>
<td>DVD submission for competitions</td>
<td>$20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$460</strong></td>
</tr>
</tbody>
</table>
Bibliography


Bibliography


