Senior Project Paper

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5/6/15

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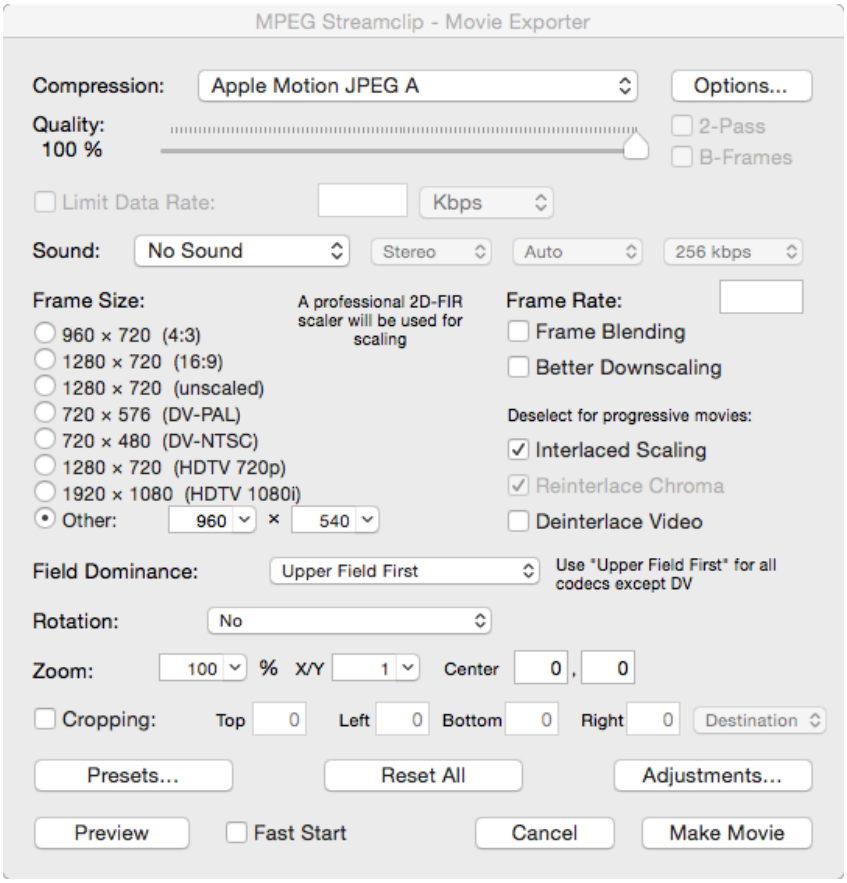
Video Backgrounds

For my senior project I decided to change my website's background from a traditional static image to a more dynamic video. With Internet speeds becoming faster and computer processing becoming more powerful, I believe that this is the day in age where webpages can handle video backgrounds. I think that it is amazing to see that more sites are using animations and video to give their webpages more of a visual impact. What I mean by visual impact is that it catches the users eye and makes them want to stay longer and navigate further into the webpage. So I went out and began capturing footage that could be optimized for the web.

Video Optimization

The raw footage that I took would have been way to large to try and run on a website, so I had to optimize each piece of video. For the Bayshore footage I wanted to make a seamless repeating loop. For that I cut the video down to about six seconds and imported it in After Effects. To make the loop seamless all I had to do was cut the video in half and slide the end half to the beginning and the beginning

half to the end. Then a simple crossfade between the two made the transition barely noticeable. The rest of the footage I simply trimmed down to what I thought was the most interesting part. I tried to keep every video under ten seconds otherwise the file size would be too large. I exported every video into a QuickTime format using Mpeg Streamclip. The following picture describes the settings I used.



That exported video then became the master video. The master video was then sent to Miro, another video processing application. Miro would convert the master video into the three video extensions needed in order to be played across all web browsers: Webm, Ogg, and MP4. Now that the videos are optimized they can be displayed on my website as video backgrounds.

Coding in the Videos

Having one video background was not enough. I wanted to create a way to give the user a choice of what background should be playing. I was able to achieve this by creating a separate menu specific for the different videos. The user could then click through the menu and that would change the background. The main component to this process was this PHP function.

```php
if ($_GET) { // IF THE USER CLICKS ON A LINK
             // WE WIL EXTRACT THE NECESSARY VARS FROM THE $_GET ARRAY

    $f = urlencode($_GET['f']); // FOLDER
    $q = urlencode($_GET['q']); // QUERY
    $e = urlencode($_GET['e']); // QUERY



} else { // IF THE USER IS VISITING THE SITE FOR THE FIRST TIME
         // THE DEFAULT CONTENT WILL LOAD

    $f = "home";
    $q = "default";
    $e = "bayshore1";
}

?>
```

By adding in the value $e I could now call upon a second PHP file which were my videos. My first complication was that $q and $e started to conflict with each other. I could click on a different background choice but then my content would be missing. This was a simple fix, I just needed to update the both of my menus to also

search for my new variable $e like so:

```
<div class="nav" id="bayshore" title="bayshore1">
<a href="?f=home&q=default&e=bayshore1">Bayshore</a>
</div>
<div class="nav" id="topgolf" title="topgolf1">
<a href="?f=home&q=default&e=topgolf1">Top Golf</a>
</div>
<div class="nav" id="roadbike" title="bike1">
<a href="?f=home&q=default&e=bike1">Road Bike</a>
</div>
<div class="nav" id="dog" title="dog1">
<a href="?f=home&q=default&e=dog1">Dog</a>
</div>
<div class="nav" id="octopus" title="octopus1">
<a href="?f=home&q=default&e=octopus1">Octopus</a>
</div>
```

Now the "<a href" looks for three different variables instead of two. Not only can the user click between backgrounds, but I could also make it be that each new page has a different background. This could be import to different websites that want to showcase a different video that is specific for each page.

The video PHP files were very easy to construct. I set them up like before in HTML5, but just saved them as PHP instead. Then I saved them to a background folder. The code from the index page would search like this:

```
<div id="bkgmenu">
    <?php include("inc/bkgmenu.php"); ?>
</div>
<div id="bkgnav">
    <?php include("background/" . $e .".php"); ?>
 </div>
```

Where background is the folder and $e is whatever the user clicked on.

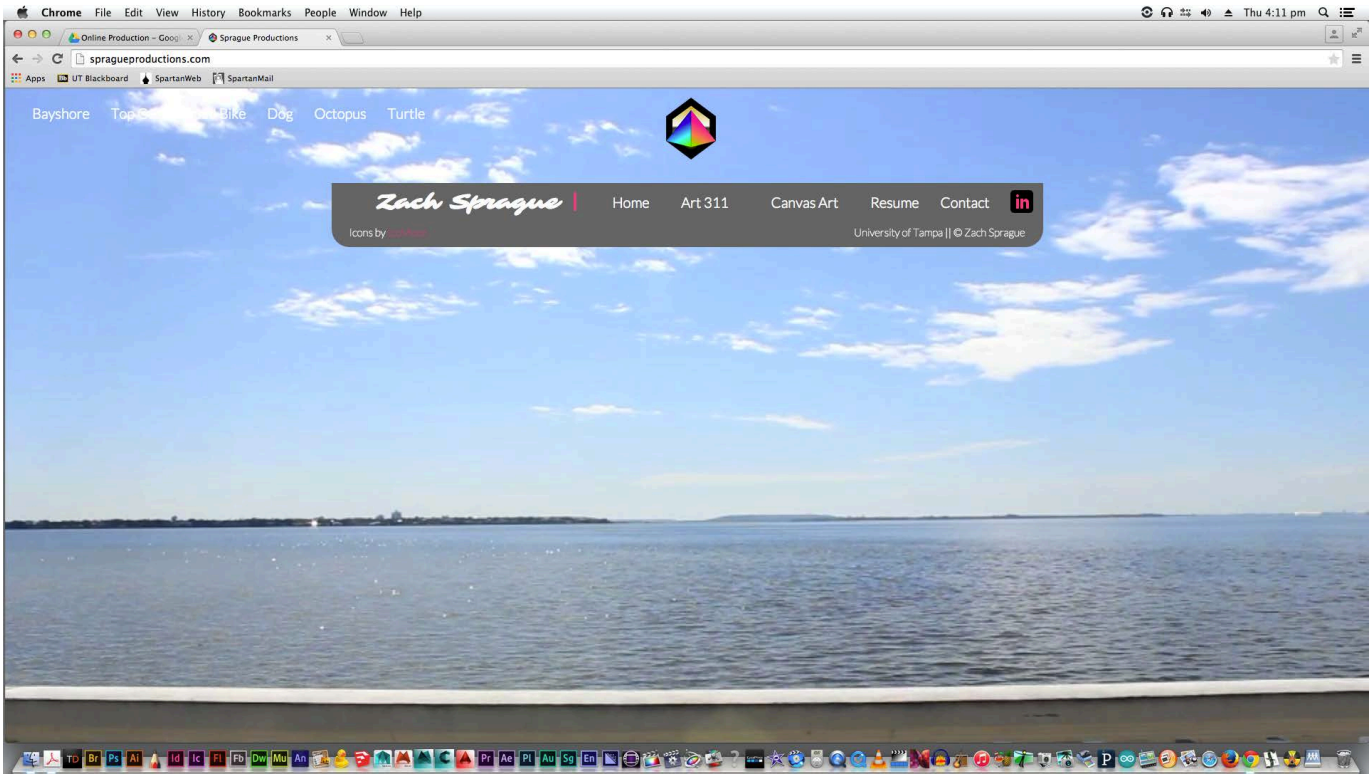
In order to get the videos to stretch and become the background all I had to do was manipulate the CSS style sheet. Each new video has a unique ID, in this case it is “bkvid” followed by a number. The following code is used to format the video to become the webpage’s background:

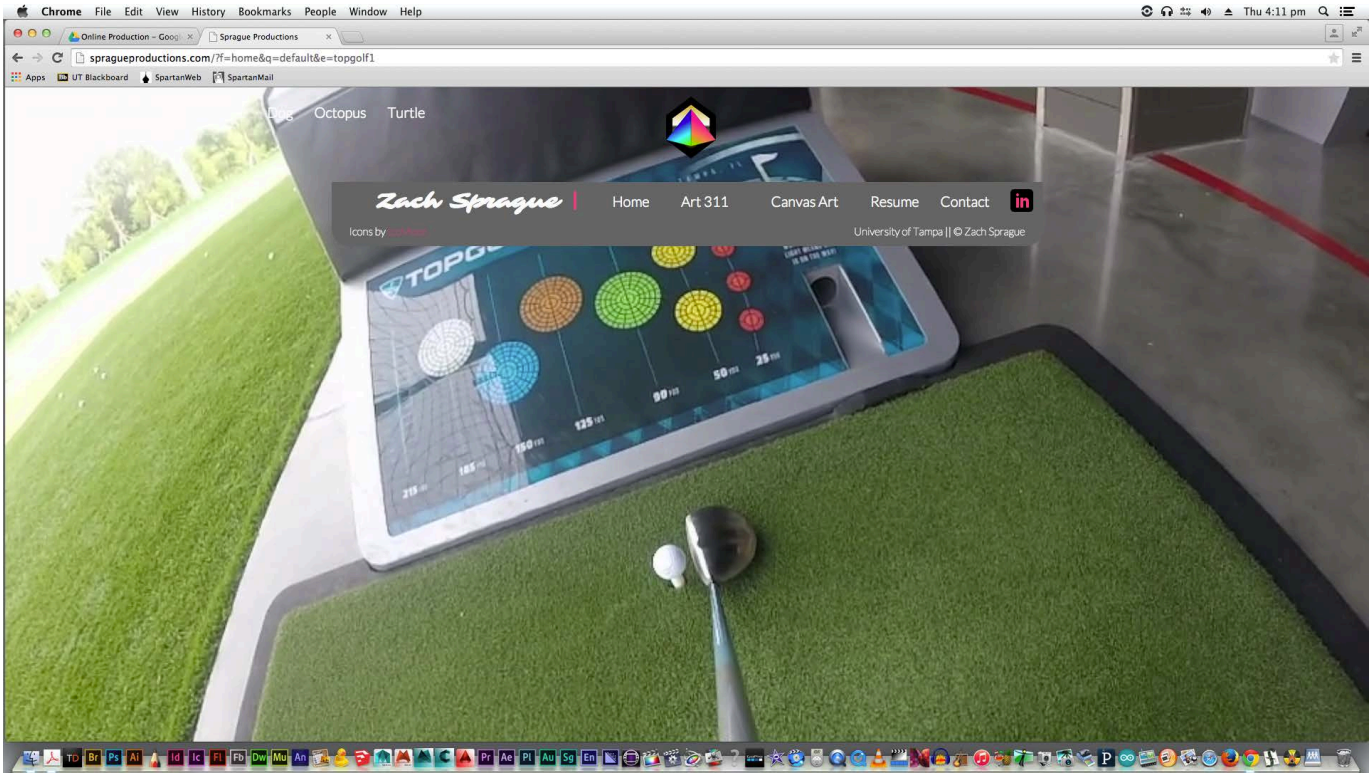
```
#bgvid1 {
    position: fixed;
    top: 0px;
    left: 0px;
    min-width: 100%;
    min-height: 100%;
    width: auto;
    height: auto;
    z-index: -100;
    background: url(home/homevid/tgposter.png) no-repeat;
    background-size: cover;
}
```

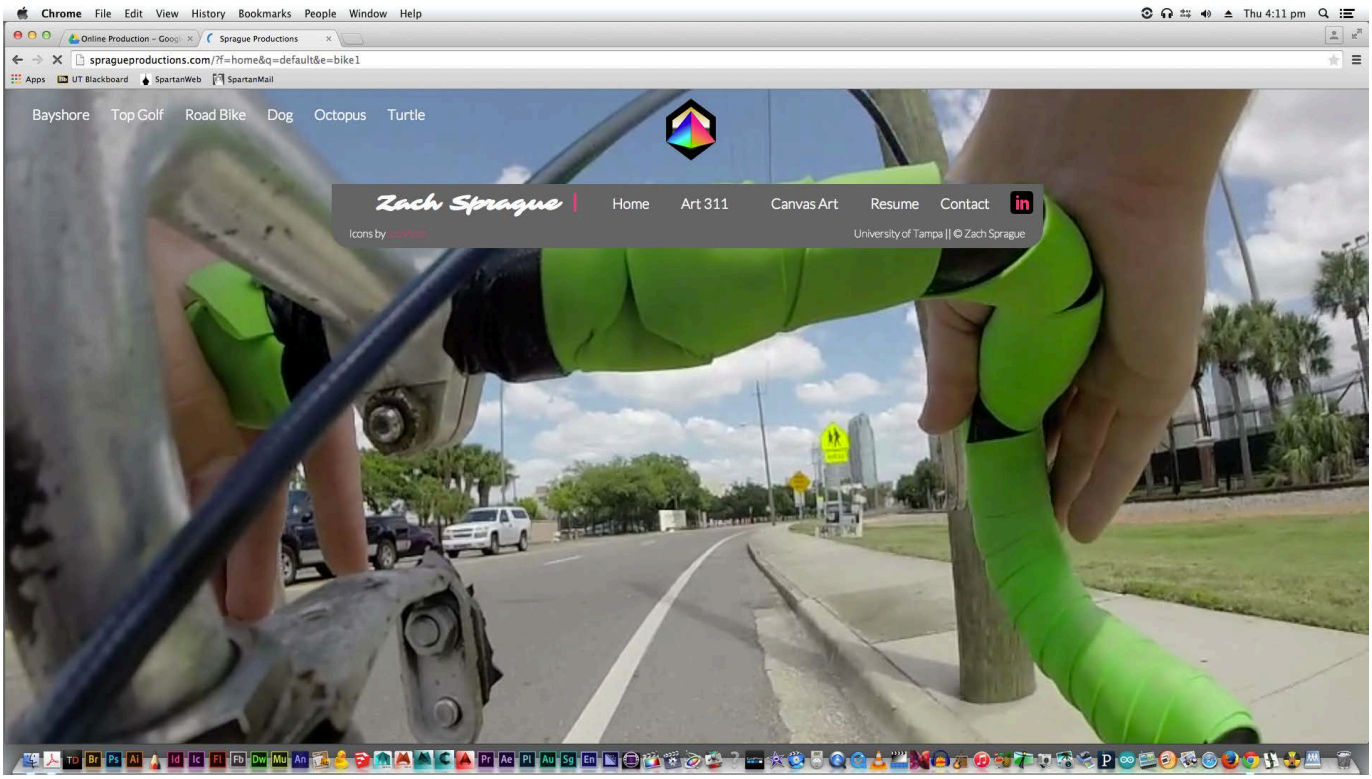
Each video has a poster as well. The poster serves as a placeholder until the video file is fully loaded. For users with slower Internet connections this is great because it still gives them something look at before the loop starts playing. I used the first frame of every video for the posters to make the transition subtle when the video starts to play.

Overall I think video backgrounds bring a nice new way to look at websites. I think a more dynamic visual is more pleasing to look at and keeps the user’s attention longer. A video can send a more powerful message than a picture can if used correctly. In short my senior project has helped me to see the new possibilities that can be done with web design and I look forward to exploring even more new ideas.

Final Design



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Bayshore
Top Golf
Road Bike
Dog
Octopus
Turtle
Zach Sprague
Home
Art 311
Canvas Art
Resume
Contact
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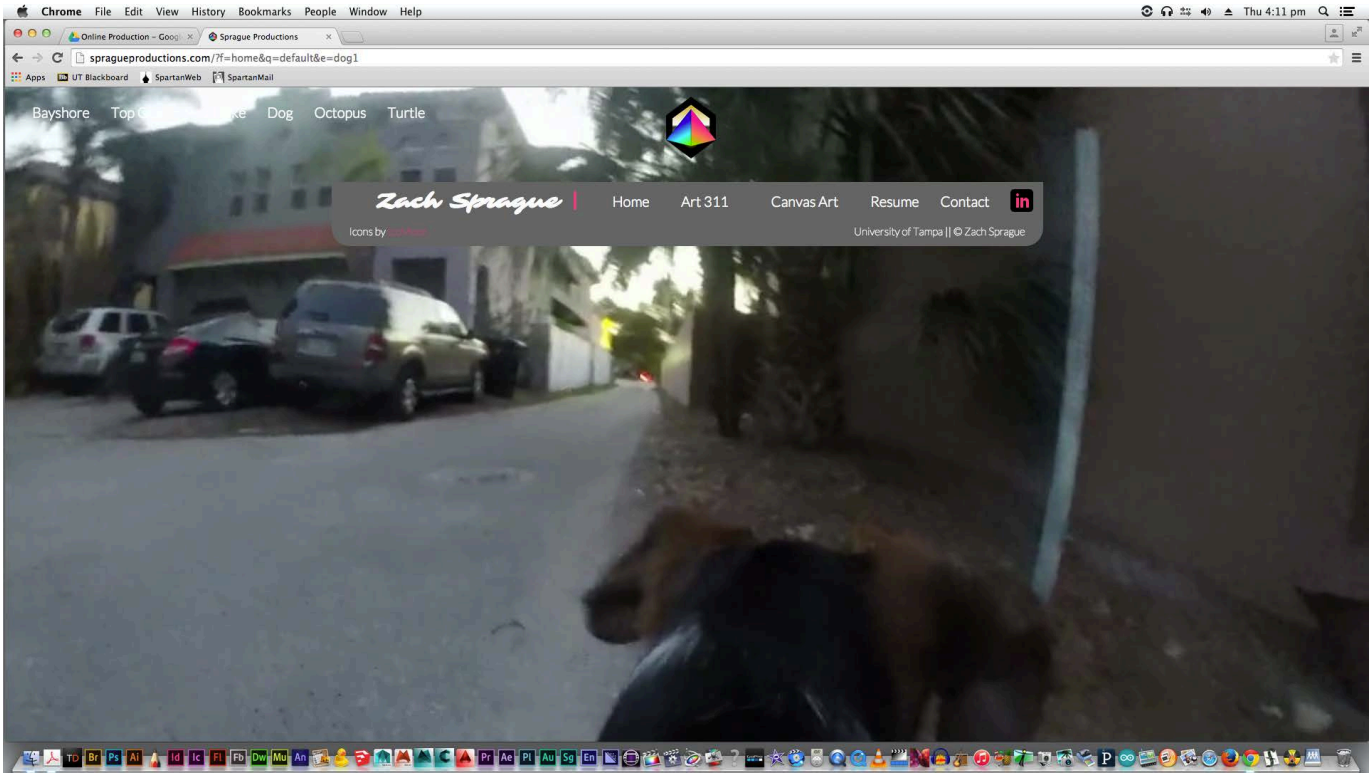
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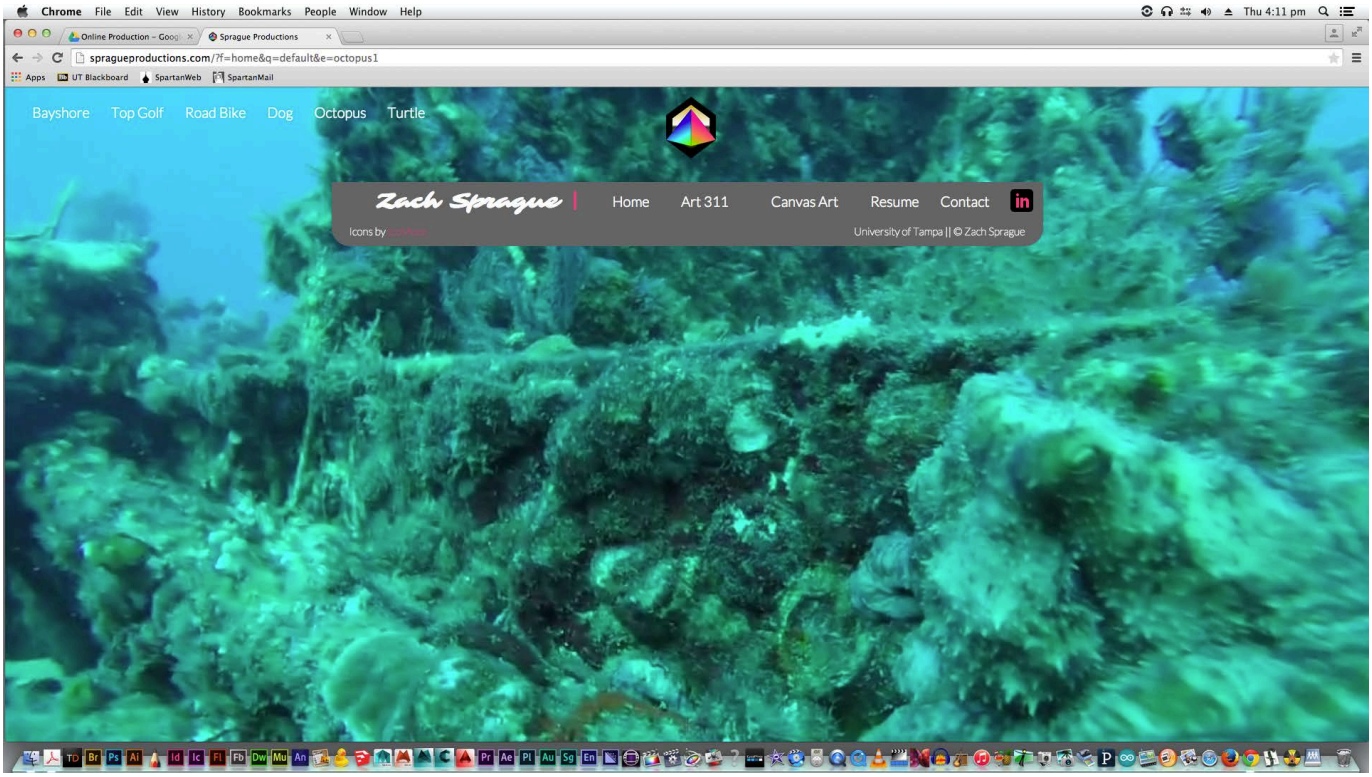
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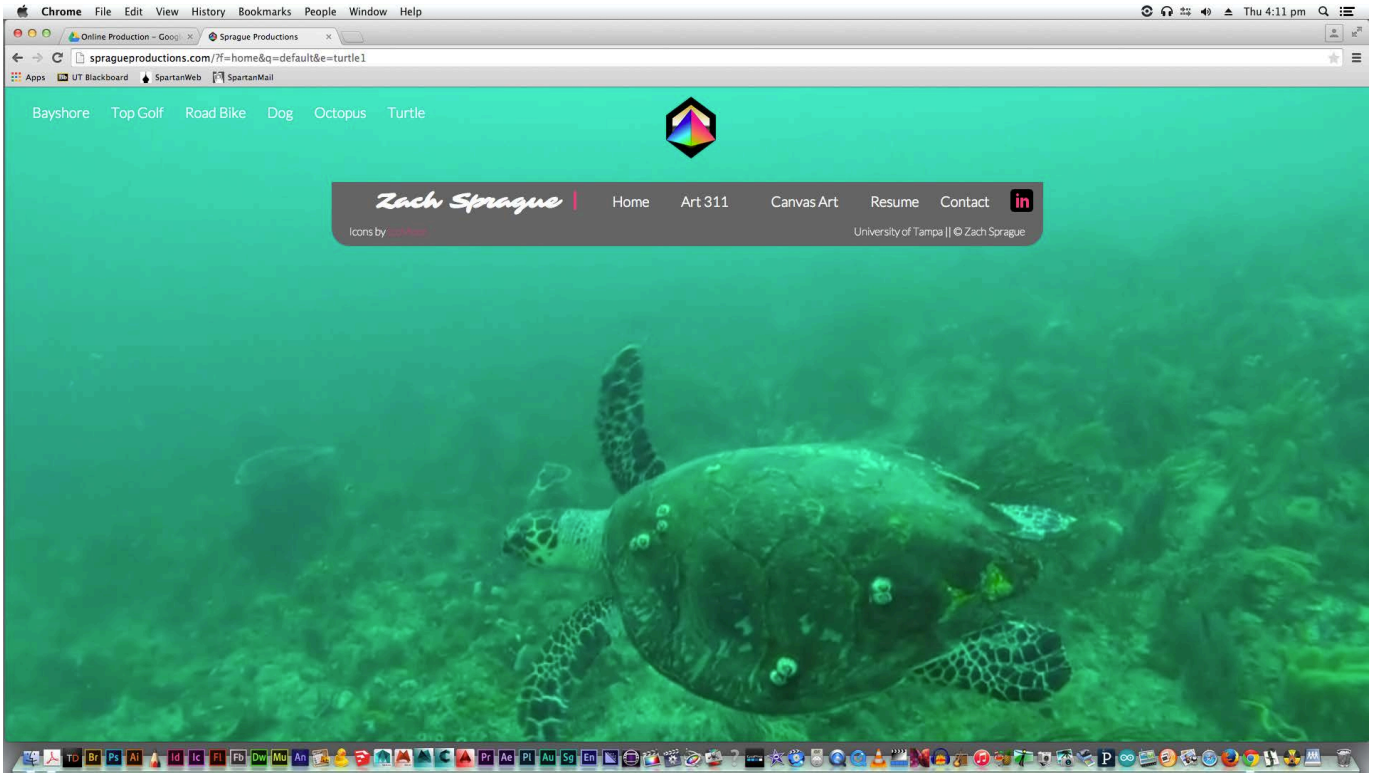
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