HACETTEPE UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING

BBM 325
INTERNSHIP REPORT

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Performed at
HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB (under the supervision of Assistant Professor Ufuk ÇELİKCAN)

17.08.2020 - 25.09.2020
30 Work Days (remotely)

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TABLE OF CONTENTS

1 Introduction

- I did my internship remotely with Assistant Professor Ufuk ÇELİKCAN of Hacettepe University Computer Engineering Department, thanks to the opportunities provided by our professors under these difficult conditions we had in the pandemic.
- The main subject of my internship was HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB website regulations. While working on these regulations, I developed myself in website regulations. I made both frontend and backend improvements.

2 Company Information

2.1 About the company

HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB Formally established in 2017, The Computer Graphics and Game Studies Research Group at Hacettepe University is devoted to conducting state-of-the-art research on design of methods, algorithms and systems for
Computer Graphics
Computer Animation
Virtual Reality (VR)
Augmented Reality (AR)
Stereo Vision and StereoGraphics
Image Acquisition and Synthetic Image Generation
Serious Games and Simulations
Artificial Intelligence in Games
Multimodal Learning

2.2 About your department

My department's mission is to provide the necessary improvements on the front and back end of the HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB website. These tasks were controlled by my supervisor teacher during my internship and progressed in line with his requests.

2.3 About the hardware and software systems

Although I mostly worked on html and front end in this internship, I also made necessary arrangements on css and javascripts when necessary. I made these arrangements from my own computer. We communicated with my teacher on the drive and communicated via e-mail.

2.4 About your supervisor

- Assistant Professor Ufuk ÇELİKCAN
- Dept. of Computer Engineering Hacettepe University Beytepe, Ankara 06800 / Turkey
- +90 312 297 7500 - 131,
- ufuk.celikcan@gmail.com --- celikcan@cs.hacettepe.edu.tr
- Doctor of Philosophy, Electrical Engineering University of California, Riverside, California, September 2013 Master of Science, Computer Engineering Bilkent University, Ankara, Turkey, January 2015 Master of Science, Electrical Engineering University of California, Riverside, California, June 2010 Bachelor of Science, Electrical & Electronics Engineering Bogazici University, Istanbul, Turkey, June 2006 Concentration: Signal Processing and Communication Systems Bachelor of Science, Physics (via the double major program) Bogazici University, Istanbul, Turkey, June 2006

3 Work Done

I started the arrangements of the HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB site, which is the main subject of my internship, with the arrangements made on the research and project pages. While making these arrangements, our first priority was to organize the jquery structure, which was previously made but useless in the background and difficult to add new projects, and to add more easily each time a new project arrives and to reduce the waste of time. I made the necessary arrangements for this and it became easier to add new projects and researches. After making the background arrangements, the front end arrangements were made, such as the layout of the page, to keep the text visible on the page when scrolling. Video has been added to newly added articles. The same layout applied to the research page is also applied to the projects page.

```
// Smooth scrolling using jQuery easing
$('a.js-scroll-trigger[href*="#"]:not([href="#"])').click(function() {
  if (location.pathname.replace(/^\//, '') == this.pathname.replace(/^\//, '') && location.hostname == this.hostname) {
    var target = $(this.hash);
    target = target.length ? target : $('[name=' + this.hash.slice(1) + ']');
    if (target.length) {
      $('html, body').animate({
        scrollTop: (target.offset().top)
      }, 1000, "easeInOutExpo");
      return false;
    }
  }
});
```

```
$(document).ready(function(){
  var everyChild = document.querySelectorAll("li");
  var every = [];
  var count=0;

  for (var i = 0; i<everyChild.length; i++) {
    if(everyChild[i].id){
      every.push(everyChild[i].id);
      count++;
    }
}
  var button = document.getElementById(count);
  var url = document.URL;
  var id = url.substring(url.lastIndexOf('#') + 1);
  if(button){
    button.click();
  }
  if(every.indexOf(id) >= 0){
    var button = document.getElementById(id);
    button.click();
  }
})

)(jQuery); // End of use strict
```

After the arrangements for these pages were completed, the readability of the articles on the home page, page layout, text colors were adjusted on the main page.

4 Performance and Outcomes

4.1 Applying Knowledge and Skills Learned at Hacettepe

First of all, even if there was something I did not know in the tasks assigned to me, I was able to research and learn about that subject easily and to learn new things continuously in my internship thanks to the education I received at Hacettepe.
And through the software engineering lesson I received, I had almost all the infrastructure I needed while making the necessary arrangements on the website.
I think that the assignments we do throughout our school years contributes a lot to solving problems and completing tasks on our own.

4.2 Solving Engineering Problems

Since I could not do my internship face to face in a business environment due to the pandemic, I could not gather much information about engineering problems in this internship. However, my experience in general working principles such as completing tasks and taking responsibility within a certain period of time increased.

4.3 Teamwork

I did not do this task with any team. However, I made improvements by harmonizing on a project that was previously created on a website whose basis was created by Oğuz Bakır and Zeynep Bala. While making these improvements, we proceeded in line with the requests of my teacher, Ufuk Çelikcan. We followed the changes we made with my teacher from the drive so that we could work together easily.

4.4 Multi-Disciplinary Work

I was not part of a multidisciplinary study or team during my internship because I did my internship remotely and I did this task alone. However, I did my internship in cooperation with my supervisor and by constantly communicating with him. I also fulfilled the assigned tasks on time.

4.5 Professional and Ethical Issues

During my internship, I did not encounter any professional issues or work-related ethical issues.

4.6 Impact of Engineering Solutions

Since my internship subject is on the website of a field of our school, as a result of my duties, to facilitate the lives of our friends who want to work in this field and to provide them with easy access to the information they want to reach.

4.7 Locating Sources and Self-Learning

During my internship, I did a lot of research on the internet when I encountered a problem or something I do not know. Some of the internet resources I researched were on javascript jQuery that I know less. Using jquery on the site, I have arranged the rankings that are not made correct and useful on the research and projects pages. Besides, I did a lot of research about css and html for frontend and learned new features.

4.8 Using New Tools and Technologies

During my internship, I had to make changes to the javascript that I did not know and did not work on before. In order to make these changes, I had to understand the javascript codes first, I watched lessons about the parts I need to deal with in order to understand these codes, I started to understand the code parts and I was able to apply the desired changes easily. I was able to access the information I was looking for on the internet when there were places I did not know in the Css codes.

5 Conclusions

In general, my job was to make changes on the front end of the HACETTEPE UNIVERSITY COMPUTER GRAPHICS and GAME STUDIES LAB website on the homepage, research page and projects page. Contributing to a website linked to our school played an important role in my self-improvement. I made great progress on css and html while editing this website.

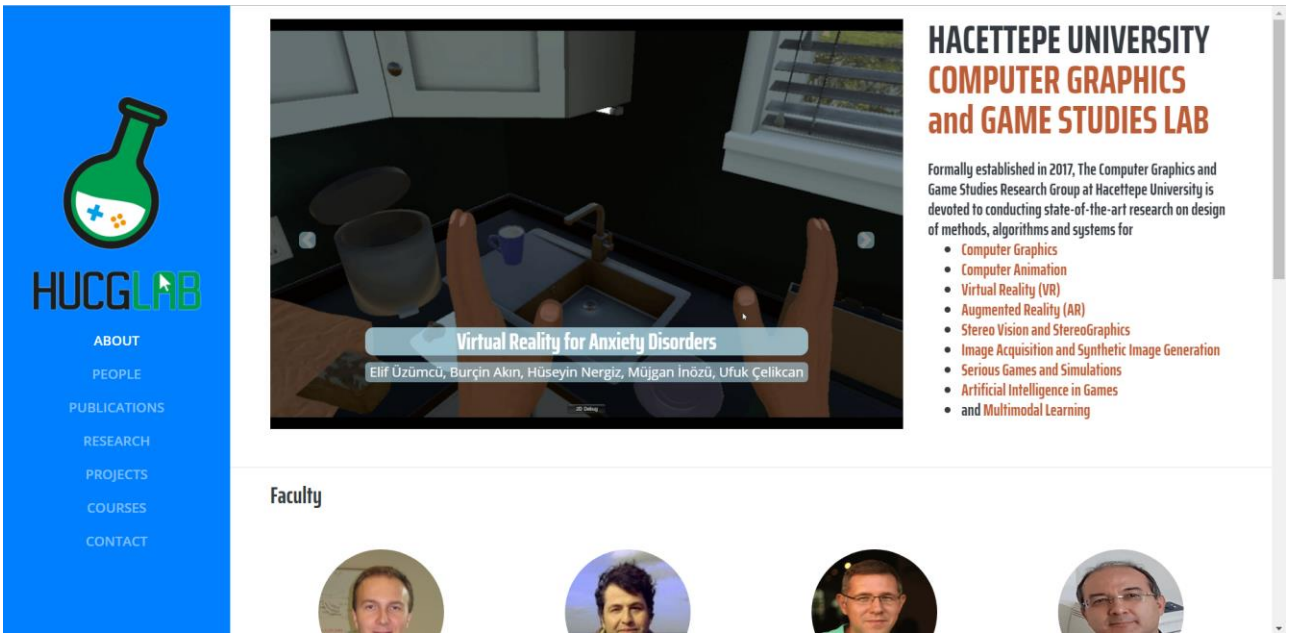
I made legibility, font changes and visual improvements of the articles in the slider on the main page.
I changed the background layout of the research page using jquery and made edits to the new articles to be added on the front side, and made the general frontend corrections of the page. I have applied the same arrangements to the projects page.
As I was doing a remote internship while doing all these tasks, I learned to carry out the changes requested by my teacher together and it was ensured that these requests were followed up by mail.
I learned the background of the languages I used during this internship, thanks to the education I received at Hacettepe, and it became easier for me to understand languages that I do not know.
I think that the biggest factor that makes it easier for me to do these tasks is the project-based assignments at school.

References

[1] https://css-tricks.com/dealing-with-overflow-and-position-sticky/ [Accessed; Aug 17, 2020].
[2] https://jquery.com/ [Accessed; Aug 19, 2020].
[3] https://www.youtube.com/watch?v=hMxGhHNOkCU [Accessed; Aug 24, 2020].
[4] https://css-tricks.com/dealing-with-overflow-and-position-sticky/ [Accessed; Sep 1, 2020].
[5] https://github.com/w3c/csswg-drafts/issues/865 [Accessed; Sep 3, 2020].
[6] https://developer.mozilla.org/en-US/docs/Web/CSS/position [Accessed; Sep 7, 2020].
[7]https://www.youtube.com/watch?v=FxKqDLVZth0 [Accessed; Sep 10, 2020].
[8] https://www.youtube.com/watch?v=9YffrCViTVk[Accessed; Sep 15, 2020].
[9] https://www.tutorialspoint.com/How-to-set-background-color-in-HTML#:~:text=To%20set%20the%20background%20color,used%20to%20add%20background%20color. [Accessed; Sep 18, 2020].
[10] https://www.w3schools.com/cssref/css3_pr_background-size.asp [Accessed; Sep 21, 2020].

Appendices

I did my internship remotely and the images of the site I edited are below.



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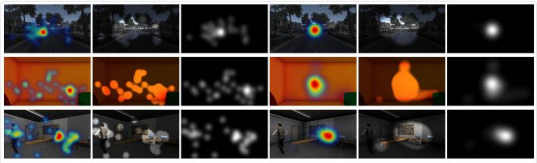
PEOPLE
PUBLICATIONS
RESEARCH
PROJECTS
COURSES
CONTACT

RESEARCH

- **Deep into Visual Saliency for Immersive VR Environments Rendered in Real-Time**
- The use of virtual reality (VR) exposure for reducing contamination fear and disgust: Can VR be an effective alternative exposure technique to in vivo?
- A Comprehensive Study of the Affective and Physiological Responses Induced by Dynamic Virtual Reality Environments
- Visual Saliency Prediction in Dynamic Virtual Reality Environments Experienced with Head-Mounted Displays: An Exploratory Study
- Detection and Mitigation of Cybersickness via EEG-Based



Deep into Visual Saliency for Immersive VR Environments Rendered in Real-Time

As virtual reality (VR) headsets with head-mounted-displays (HMDs) are becoming more and more prevalent, new research questions are arising. One of the emergent questions is how best to employ visual saliency prediction in VR applications using current line of advanced HMDs. Due to the complex nature of human visual attention mechanism, the problem needs to be investigated from different points of view using different approaches. Having such an outlook, this work extends the previous effort on exploring a set of well-studied visual saliency cues and saliency prediction methods making use of these cues with the aim of assessing how applicable they are for estimating visual saliency in immersive VR environments that are rendered in real-time and experienced with consumer HMDs. To that end, a new user study was conducted with a larger sample and reveals the effects of experiencing dynamic computer-

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