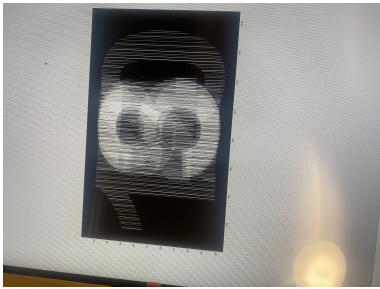# CSE 493V Final Project

ELIJAH MATAMOROS

1 INTRODUCTION

For this project I attempted to build a glasses free 3d display. In my project proposal, I stated that I wanted to create a 3d display that could support multiple viewing angles in order to allow for several poeple to watch at once. Though possible I soon realized that not only is this a programming issue the multiple viewing angles relied on the type of lenticular sheet I had on my display. This was so that the left eye light which is red and the right eye light which is blue, is directed directly into your eye and giving you a 3d image. The difference between a 3d display that has one viewing angle versus a 3d display with several viewing angles is that the lenticular sheets vary in the amount of light they can direct due to the number of lens on them. The lenticular sheet used in my project was a 17"x13" with 90 LPI (lens per inch)
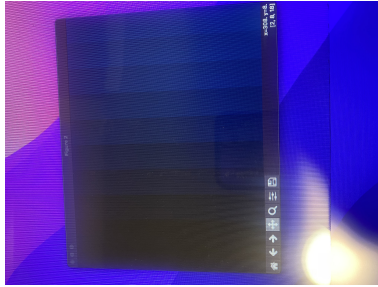
2 RESULTS

By interlacing an image in python and Matlab, I was able to combine the use of the lenticular sheet and my newly formed image to create a 3D effect. This worked particularly well with the Matlab code that I was provided. However, when implementing this in python myself, I ran into some issues and couldnt get my image to appear properly. However, I was able to assemble the 3D display and use the provided code to display 3D.

2.1 Challenges

One of the biggest challenges for me throughout this project was understanding how to interlace and image. This was a completely new task for me to take on, on my own, and despite my python coding not functioning properly, I am proud to say I have taken away a lot from this project. Another Challenge for this was trying to understand the previous code and trying to implement it to another language as well as using different tools and materials than the previous version of the

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project use made it tough to try and get the measurements right. Here is a look at what results my

python code produced

3 QUESTIONS

After working on this project one of the questions that I have is about the Acetate diffuser I requested. This diffuser was supposed to be used alongside the lenticular sheet I have, however when test my results with and without the acetate sheet, I saw no major differences to the effectiveness of the 3D. However, when shifting the sheets around on the screen, I was able to see different 3D affects that made it seem as if it was dimming and flattening the affect.

4 DEVELOPMENT PLAN

Final projects should be completed over two weeks (i.e., May 23 through June 6). Students are encouraged, but not expected, to start earlier. To assist in assessing the complexity of your project, please provide a high-level development plan, including major milestones (i.e., dates that significant hardware or software features will be tested or completed). Include time for writing your final project report and preparing for the final project demo and poster session.

- **Date 1**: Milestone 1.
- **Date 2**: Milestone 2.
- **Date 3**: Milestone 3.

Include a list of references (e.g., external websites and publications).