

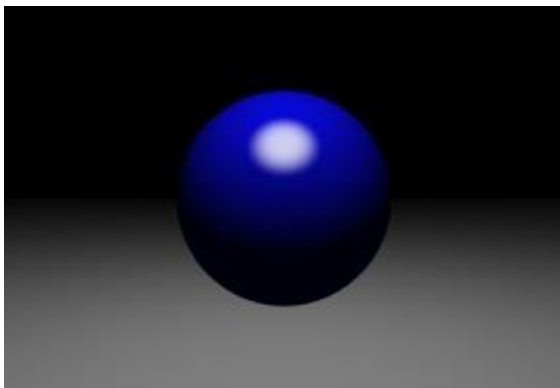
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# Portfolio

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I'm a Computer Scientist who loves programming. My areas of interest are Computer Graphics, Video Game Development and Animation. I have research experience in Machine Learning and Computer Vision, and professional experience with Web and Mobile apps.

## Python Raytracer (Work in Progress) – Jan to May 2020



I have been working in a Raytracer for Python for the Image Synthesis class and learned a lot of Computer Graphics and 3D Math. It is not efficient, and the main purpose is educational. You can see my code on GitHub here:

<https://github.com/HenrYxZ/simple-raytracer>

It first started with a 2D shader and evolved to a 3D Raytracer, you can see the shader here:

<https://github.com/HenrYxZ/2d-simple-shader>

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## Image Object Classification - January to March 2016



Back at PUC, my home university, I won a Short-Term Research Scholarship to travel to Texas A&M University for about 2 months. I worked on Research for Agriculture under the Department of Computer Science and Engineering, advised by prof. Bruce Gooch. I created an image classification program from scratch with Python and OpenCV and using the libraries numpy, scipy and matplotlib. The model had an accuracy of 80% with 5 classes and about 30 testing images per class.

The repository has 16 stars and 9 forks, you can see it in:

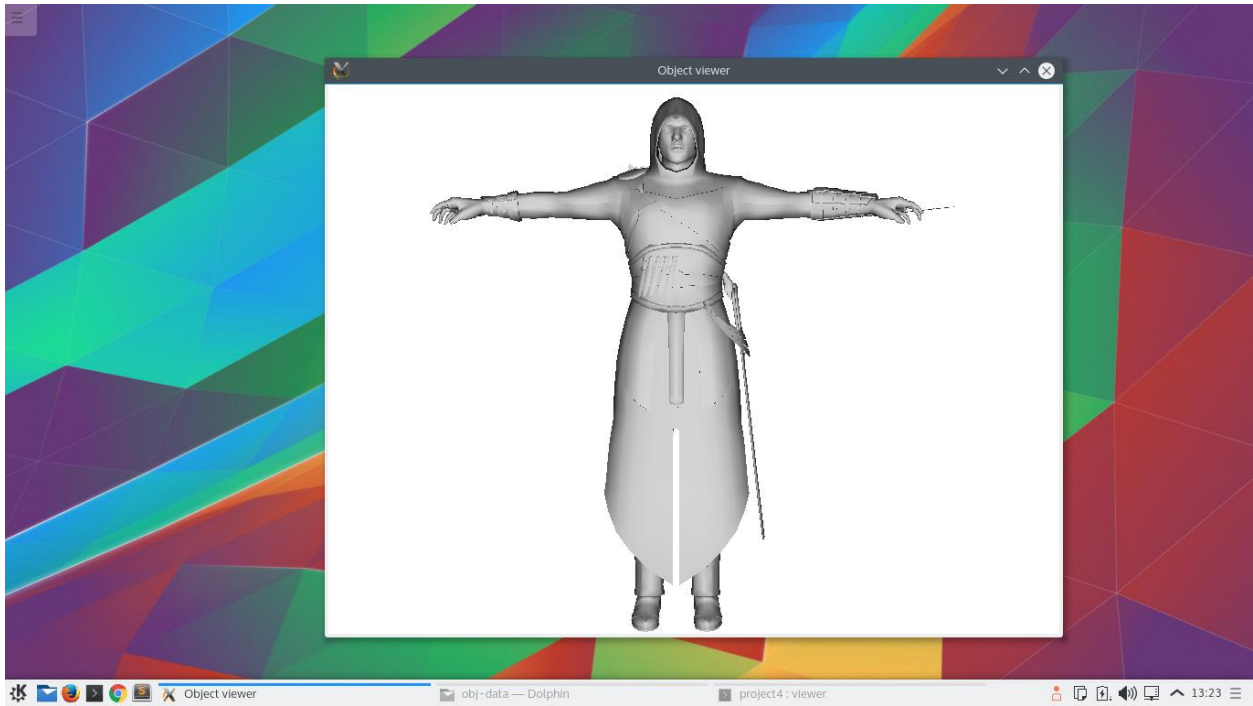
<https://github.com/HenrYxZ/object-classification>

A blog of weekly reports is here: <http://aggiecv.blogspot.com/>

In my last week, I made a prototype feature of voice commands using speech recognition for an Android app used in Agriculture research.

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## C++ Object Viewer for OBJ format - March 2013



For the same computer graphics class we had to implement an object viewer program using arc ball rotation and zoom in and out. We did it in a group of 3 people. The code for that is here: <https://github.com/HenrYxZ/GraphicsII/tree/master/project4>, it uses OpenGL and C++.

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## 3D Modeling and Texturing - Fall 2019

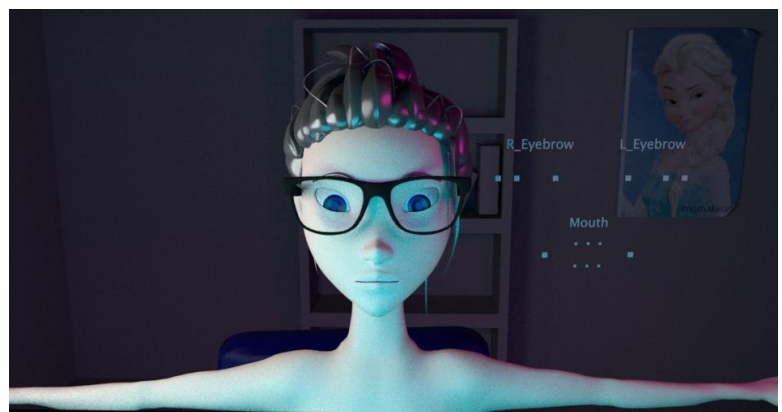
For the graduate class 3D Modeling and Animation I modeled and textured this objects:



I textured this dresser (someone else made the model):



I made the skin for this character:



Video Link:

<https://www.youtube.com/watch?v=9UBbZcnHh-0>

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Everything was made using Maya, Substance Painter and RenderMan.

## Life Drawing - Summer 2019

In this class at Texas A&M University we explored the concepts of motion and weight, went through human anatomy and explored compositing and lighting. These drawings were made by me and it was my first drawing and art class ever.

