Rendering Invisibility

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| Report Name | Design Specification |
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# Introduction

The purpose of this document is to lay out a design for the system as a whole and for the invisibility cloak model. This specification is intended to inform me and my supervisor of the design I have envisioned for the project and as a reference for my future work. Another aim of this specification is to work out the feature list which I will be building from, according to the feature driven development I have chosen to work through. There will also be a section working through considerations I have had to make through research and limitations of what I have to work with. There will also be two overall designs, detailing the system design, including what I have already implemented, and the model design, which will be a design of different models I will aim to work through, applying my research to creating them.

# Design Considerations

## Assumptions and Dependencies

The language I am using for this project is Javascript, mainly working with WebGL and Three.js as this is a graphics project. Therefore I am making the assumption that it will work on all operating systems but may not work on all web browsers. I am expecting it to run on Chrome, Safari and Firefox due to these having good support for WebGL. I know that Opera has it disabled by default but should support WebGL, and Internet Explorer has still got some issues with WebGL. I will make sure to include support for the three browsers as required, but I will make less of an effort to make it work for Opera and IE.

I will need to decide on what rendering technique I am using, as the research I have done has concluded for me that I need to be able to do complex refractions and the basic refraction support in WebGL or Three.js has some trouble modelling complex refractions. This means I am looking into real-time rendering techniques, as these will make for a better demo. I have decided that my final rendering technique it likely to be either ray tracing or photon mapping. I will intend to make the decision soon, after some more research into the dependencies of the two techniques.

## Goals and Constraints

The goal of the system is to create a model or models of a theoretically possible invisibility cloak. This invisibility cloak could

# Feature List

As I am following the Feature Driven Development methodology, I will be working through a list of features. These are the features I have come up with according to my research and prototyping.

# System Design

The system design is relatively simple as I am mainly interested in the creation of the model(s)

# Model Design

The design for the model(s) comes from the papers I have read and discussions with my supervisor.

# Bibliography