# 3D Graphics Programming

# Performance Improvements

## Buffer Pointers

Performance could be improved using the stride and step functionality within the “glVertexAttribPointer” function to reduce the amount of buffers created allowing us to more efficiently use graphics card memory and will also be faster for loads times only loading one array as opposed to loading multiple arrays.

## Deferred Rendering

The current model used is called forward rendering which is an inefficient way of calculating lighting as it requires all the calculations for each light to be calculated even if it has no effect on the fragment in question, we do this by first rendering the scene without lighting. We then calculate each light per pixel instead of per fragment which also allows us to restrict lighting on certain pixels.