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**Computer Graphics Final Project – Robotic Arm Simulator**

**Project Overview**

Robotics is a relatively new field that has gained traction and interest quickly in recent years. However, there are two problems that budding roboticists face when learning about this exciting field. Robotics has a high initial barrier to entry; even the cheapest industrial robot is at least $10,000! Secondly, robotics requires a vast amount of theoretical knowledge before one can even implement basic functionality. These two barriers can easily be overcome with the creation of a robot simulation.

Unfortunately, many robot simulators today are currently either extremely expensive (to the tune of several hundred dollars) or are platform-specific. For example, a popular robot simulator is the Gazebo project (<http://www.gazebosim.com>). However, this software is currently only supported on Linux platforms and has a large set of software requirements, forcing interested roboticists into learning how to use Linux. Additionally, current simulators are difficult to use and have unintuitive controls. I decided to create a WebGL robotic arm simulator to allow users to simulate robotic arms on their browsers to avoid the problems of high-cost and steep learning curves.

**Design Requirements**

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