Cubitum Viribus: How Does the Angle of Rotation of the Mechanical Arm Affect Torque and Load Capacity?

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The purpose of this project was to create a functional exoskeleton arm that would assist someone in picking up objects, especially for those who have muscle disabilities that make their arms weaker. This project was an attempt to find a solution to this disability by giving the user extra strength through the use of the exoskeleton arm. The exoskeleton arm consists of a servo, Arduino board, motherboard, wires connecting all three of those parts, a pressure sensor, foam padding, aluminum bars, and velcro straps. For this project, keeping everything low budget while keeping the quality of the arm high was very important. Most of the materials were either bought online or found. The strength of the arm is essential to the goal of this project, so making sure that it was lightweight and powerful was a critical part in crafting the arm. Because of this, the arm was tested on its capability to lift heavy household objects. Having a powerful exoskeleton arm would add to the possibilities of uses for the exoskeleton arm.

Awards Won: