The Motorized Arm Project is an application of analog feedback control with five degrees of freedom. The arm detects the position of the user’s and mimics it using analog accelerometers. As an extra challenge, all of the control electronics are analog. That’s right! No microprocessors, and no software! The Motorized Arm Project shows that many robotic and control applications can be done reliably with non-digital devices.

The outputs of the sensors on the user’s arm and the motorized arm are compared by the summing junctions, which generate error signals. The error signals are read by the controllers, which send signals to the motors based on those errors. The result is accurate control of the arm.

The results of the Motorized Arm Project are encouraging. The arm tracks the movement of my arm with a reasonable degree of accuracy. The project could be improved by using faster and higher-power motors. This would allow the motors to move faster in response to small inputs, thereby improving the performance of the motorized arm.