Self-Adjusting Rear-View Mirror
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Abstract
Our goal with this project was to create a system that would automatically adjust the position of a vehicle’s rear-view mirror based on the lateral movement of the operator’s head. The Microsoft Kinect would track the head joint movement, and the data would then be sent to an Arduino. The Arduino program converts the Kinect’s output into real-world distance measurements and adjusts the position of a servomotor to properly align the mirror with the operator’s head.

The Kinect is able to be controlled via the Processing programming language, a derivative and simplified version of Java. Using Processing, we were able to isolate certain data points critical to our project; namely, the coordinates of the user’s head joint relative to the Kinect.

Unfortunately, we were not able to complete our project due to an inability of the arduino program to be able to successfully read coordinates from the Kinect. If we could overcome this obstacle, the next step would be to set up a motor to turn the mirror in the x-axis using command from the arduino. Although we were unsuccessful, we learned a lot about the functionalities of the Kinect and how to understand its particular brand of programming code which can help us address similar problems in the future.


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