EN2160

ELECTRONIC DESIGN REALIZATION

PROJECT SELECTION

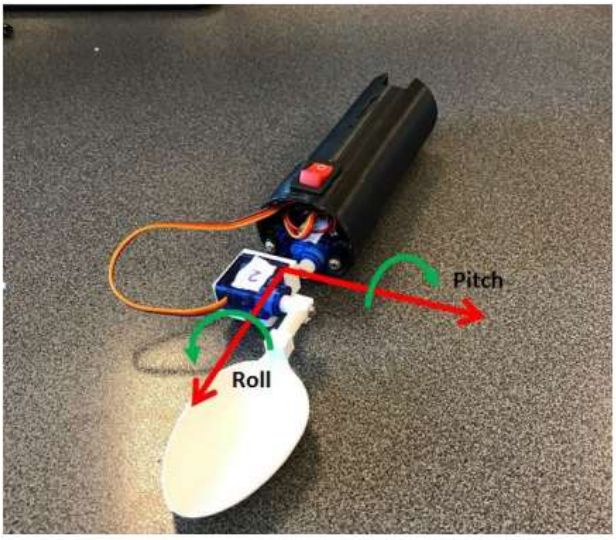
Self-stabilizing spoon

The goal of this is to examine the use of an Arduino microcontroller to assist individuals with limited motor skills while they are eating. To complement humans, a stabilizing spoon prototype that would function in practical situations was created. who require help while they are eating.

A sensor with gyroscopes and accelerometers was used to measure how quickly the device's position changed and in which direction the handle was tilted in order to make this feasible. To create a device with two degrees of freedom, two servo motors were positioned orthogonally to one another. The spoon was designed to keep its spoon basin horizontal with this configuration. The spoon's efficacy during testing was promising but had some drawbacks.

Scope

For a more detailed depiction, the spoon is designed to have two degrees of freedom: rotational movement around the x-axis, or roll, and rotational movement around the y-axis, or pitch. There won't be an engine to counteract motion on the z-axis, which is orthogonal to the x- and y-axes, because two degrees of freedom will suffice for this project.



Link for the product:

https://www.aliexpress.com/i/1005001934253004.html

https://www.amazon.com/ZZYYZZ-Parkinson-Stabilizing-Parkinsons-Patients/dp/B08C5GLF5W

https://coolstuffblast.com/gifts/self-stabilizing-spoon/

https://www.ebay.com/itm/254269211903?norover=1&mkevt=1&mkrid=711-153320-877673-6&mkcid=2&keyword=&crlp=652145299374_&MT_ID=&geo_id=&rlsatarget=dsa-1722026596481&adpos=&device=c&loc=9069431&poi=&abcId=&cmpgn=19876087150&sitelnk=&adgroupid=147714276416&network=g&matchtype=&gclid=Cj0KCQjw2v-gBhC1ARIsAOQdKY0jVeNdLewrqZEHDwOcwDxnbt2i5SxtvYNAlcQUj7OMaiK8UAw4NuQaAossEALw_wcB

https://hackaday.com/2013/10/05/self-stabilizing-spoon-for-people-with-parkinsons/

https://steadispoon.com/

https://www.liftware.com/steady/