

Title: Human-Machine Interactions Using a Flex-Sensor And 3D Printed Robot Arm

Abstract

We developed a flex-sensor based glove system that can be used to tele-operate a 3D printed humanoid arm (Langevin, 2014). The glove and arm are interconnected through an Arduino based microcontroller which has been programmed to collect sensor data from the glove and to control individual fingers of the 3D printed arm. We present our initial study in understanding the reliability and feasibility of human interfacing with the electro-mechanical arm. Using this system, we plan to understand and quantify biomimetic finger movement. The flex-sensor data captured by the Arduino is processed in order to replicate human finger movement. We plan to extend our project to create a robot hand with biomimetic movement.

Keywords: Flex-sensor, Humanoid-arm, Arduino, Electro-mechanical, and Biomimetic,

References:

Langevin, G. (2014). InMoov open-source 3D printed life-size robot. pp. URL: <http://inmoov.fr>, License: <http://creativecommons.org/licenses/by-nc/3.0/legalcode>.