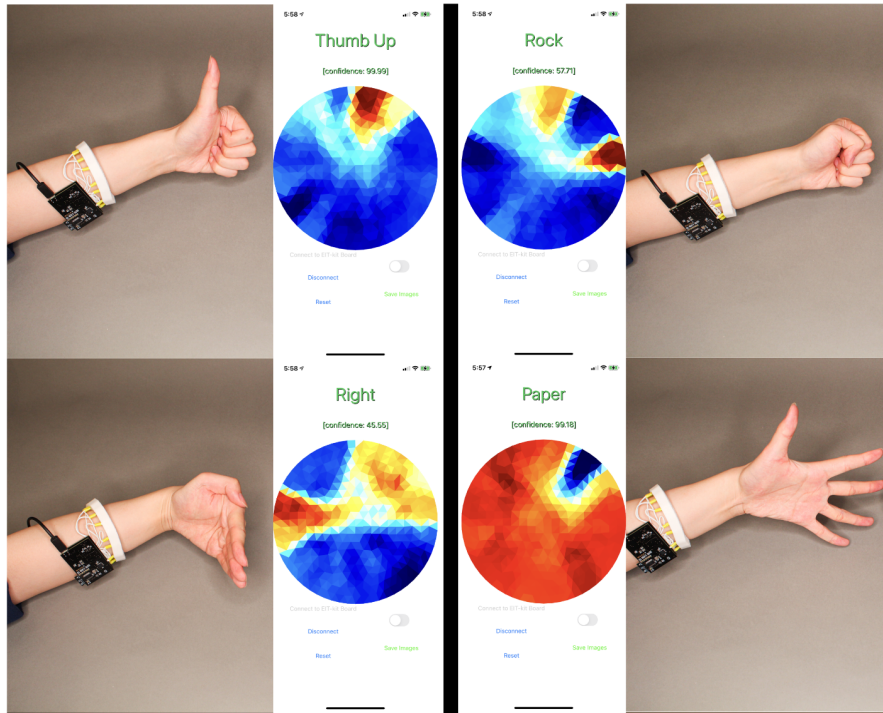


EIT Kit Mobile

Joshua Verdejo



Abstract

Traditionally, electronic devices have some type of physical input. Whether those are the buttons, triggers, and joysticks of a video game controller, or the flat, multi touch screens of mobile devices we have become used to, technology has nearly reached a boundary on these physical and visible inputs. While developments continue to be made, such as pressure sensitive displays and flexible touch surfaces, there is an entirely different aspect of technology that has not been as utilized: the invisible input. Electrical Impedance Tomography (EIT) devices measure internal muscular changes through conductivity changes measured by noninvasive electrodes worn on a wristband. In this way, users are able to imagine pressing a button, or simply make a gesture in open space, and have that gesture correspond to some command. However, these gestures do not have to be sophisticated at all -- the simple act of flexing and relaxing a muscle would be enough to generate a signal to respond to. Because of this, EIT technologies represent tremendous potential to create new interaction interfaces; both in terms of new interactions, and making older interactions more accessible as well, since the movements required to interact with an EIT based system would be much less involved. This project looked to create a novel method of interacting with EIT based devices, moving the interaction to a mobile medium in the form of a mobile API. By using a mobile device and focusing on human computer interaction, more specific features can be implemented and are explored in this paper.