Soft Sensor Based MoCap Glove

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Introduction

Motion Capture Technology provides more interactive world with digital environments due to its structures that allows much complex but still intutional user interfaces.

One of the best interaction tools for humans is hand. Therefore a MoCap Glove with high flexibility and cost effectiveness is incredibly functional solution.

The aim of this project is make o cost effective and consistent motion capture glove with the using of custom soft strain sensors and individual softwares.

Sensor Design

Soft materials similar with human skin. They can stretch, bend, twist or flex. In this project a transparent soft material filled with conductive liquid for electrical conductivity around desired value. The best option for transparent soft material because silicones cage conductive liquid to restrict its shape and the softness of silicone gives the opportunity to achieve the desired sensor. When silicone stretched the resistance of the conductive liquid decreases. According to this information a joint of human finger easily simulated with proper electronical setup and software.
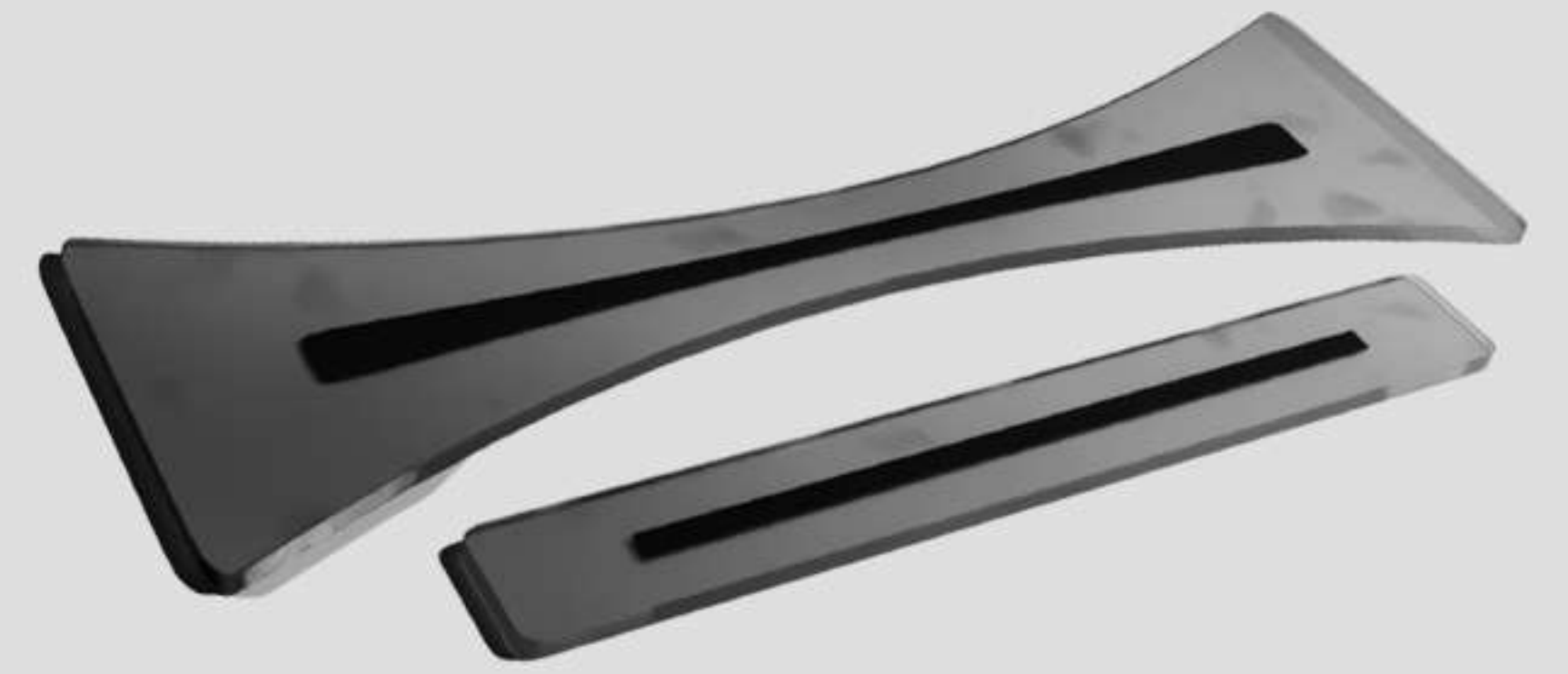
Methodology

Some complex and heavy set-ups with IMU (Inertia Measurement Unit) or some complex algorithms contain Image Processing, Computer Vision, Artificial Intelligence uses for Motion Capture Technology. All the complexity of electronics or softwares are avoided in this project.