

Docket #: S10-147

Ergonomic Touch-Free User Interfaces

A team of researchers from the Stanford Artificial Intelligence Laboratory have patented a portfolio of innovations that harness depth sensing technology to analyze human motion for touch-free control of devices and motion capture. This “Ergonomic Touch-Free User Interfaces” invention enables control of devices using natural gestures with low level of exertion and physical stress on the human user while they are interacting from a distance. The interface can localize human body parts to provide feedback and encourage the user to maintain motions that are ergonomically sound.

Additional Technologies in this Portfolio include:

Motion capture with low input data constraints [\(US patent 8,994,790 B2\)](#)

Intelligent part identification for use with scene characterization or motion capture [\(US patent 8,611,670 B2\)](#)

Motion Capture Using Intelligent Part Identification [\(US Patent application 12/712,871\)](#)

Method and System for Touch-Free Control of Devices [\(US Patent application 13/030,071\)](#)

Applications

- **Human-machine interface** for touch free interactions with devices such as:
 - computers - web-browsing, data entry, video conferencing
 - television - gesture-based remote controls
 - smart phones
 - gaming consoles
 - automotive
 - industrial robotics
- **Motion capture** for:

- animation
- task demonstration / teaching for industrial and robotic applications
- rehabilitation and athletics
- **Surveillance and security**

Advantages

- **Natural gestures** - low level of exertion and physical stress on the body
- **No augmentation** of the scene is required (such as wearing a data glove or markers)
- **Low computational cost**

Publications

- Method and System for Ergonomic Touch-free Interface [US patent application 13/052,050](#)

Patents

- Published Application: [20120235904](#)
- Issued: [9,857,868 \(USA\)](#)

Innovators

- Christian Plagemann
- Varun Ganapathi
- Sebastian Thrun
- Hendrik Dahlkamp

Licensing Contact

Imelda Oropeza

Senior Licensing Manager, Physical Sciences

[Email](#)