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 Devicesc(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)

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