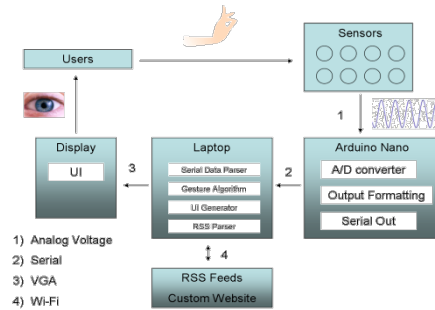# Juju Tech: IR Based Gesture Interface

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Motivation

Touchless command interfaces can be extremely useful.
- Better hygiene for interactive public areas
- Hand Gestures are intuitive and universal

Current Gesture interfaces use camera tracking algorithms
- Expensive hardware
- High System Requirements

Objective
Intuitive Hand Gesture Interface Using IR Sensors
- Inexpensive, Low Power
- Embeddable, Low Footprint, Many Uses

Development Environment

Hardware
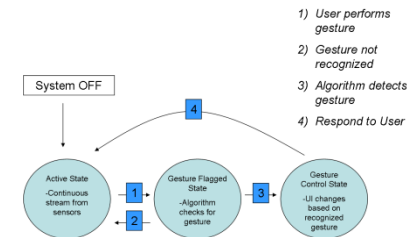- Arduino Nano
- IR Proximity Sensors
- eeePC

Software
- 'Processing' programming Language

Architecture

Sensor Array
- Detects movement and returns an analog signal

Audrino Nano
- Processes analog signal and interprets gestures from data

Laptop
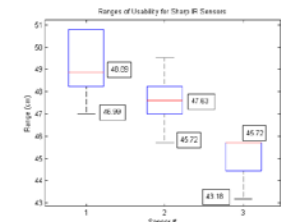- Gestures control whatever software is running

Display
- A custom software interface is implemented
- Provides useful applications tied into gesture control system

Results

Initial set of experiments
- Prototype completed, works with Ubuntu Linux
- Enabled users to interact with Compiz Fusion graphic effects package

Applications
- Interfaced with Gigapan website to allow gigapixel picture exploration
- Other applications include public directories, museum exhibits