

# Kinect

By Jeffrey Waldron

# What is the Kinect

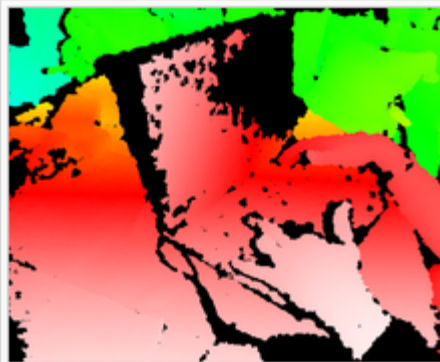
- Video and Audio sensor for Xbox 360 and 1
- SDK came out in 2011
- Version 1 and Version 2

# Video

- 4-12 feet coverage
- IR and RGB video
- Depth sensor



This [infrared image](#) shows the laser grid Kinect uses to calculate depth



The depth map is visualized here using color gradients from white (near) to blue (far)

# Video

- 3 Cameras (2 RGB 1 IR) (1.0 - 1.8)
- Both are used to find depth (1.0 - 1.8)
- Built in facial recognition

# Sound

- Ignores “acoustic sources” and “ambient noise”
- I.E. Stops music and barking dogs from coming through Xbox Party Chat

# Sound

- Built in audio command recognition in several languages
- Built in voice recognition\*
- \*Not supported in all countries

# Developing

- Only presenting on Kinect for Windows (no Xbox)
- SDK and code examples are all free on <http://www.microsoft.com>

# Developing

- Windows 7 (or higher) for 1.0 - 1.8
- Windows 8 (8.1) for 2.0





# Developing

- Must use Visual Studio (owned by Microsoft)
- Microsoft Speech Platform (owned by Microsoft)
- C# best choice (Also owned by Microsoft)

# Linux Support

- November 10, 2010 driver for Linux created by non Microsoft entity
- Both RGB cameras and Depth tracking
- Idea and funding came from Microsoft employee

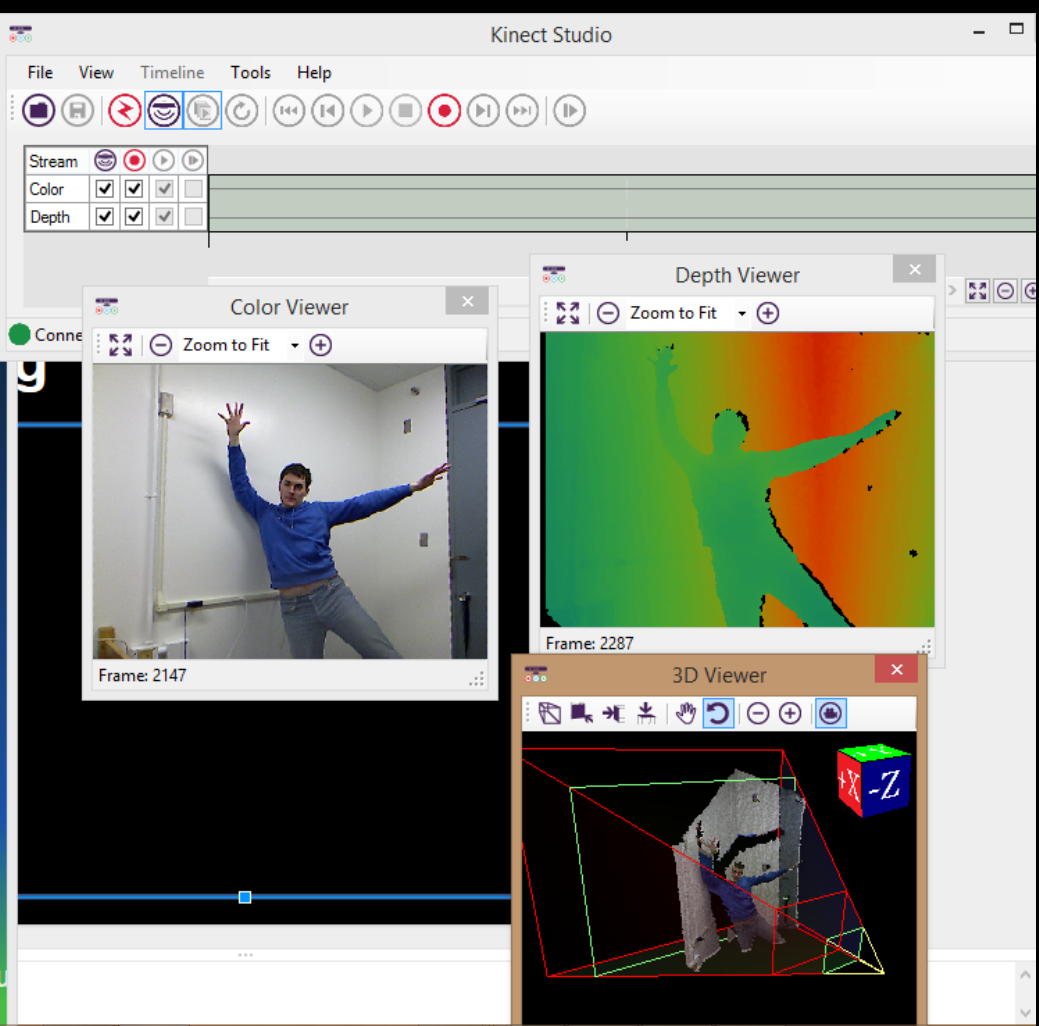
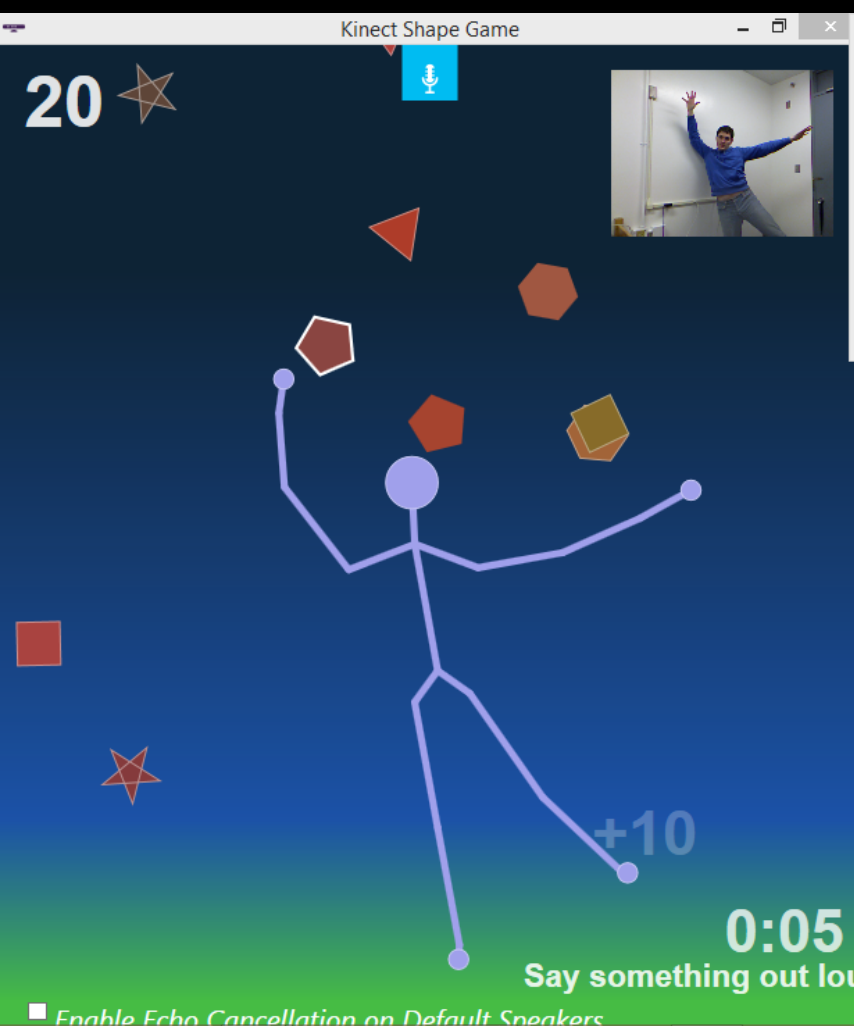
# Developing

## ● Version 1-1.8

- 32-bit (x86) or 64-bit (x64) processor
- Dual-core 2.66-GHz or faster processor
- Dedicated USB 2.0 bus
- 2 GB RAM
- A Microsoft Kinect for Windows sensor

## Version 2.0

- 64-bit (x64) processor
- Dual-core 3.1-GHz or faster processor
- Dedicated USB 3.0 bus
- 2 GB RAM
- DX11 capable graphics adapter
- A Microsoft Kinect for Windows v2 sensor



# Kinect Studio!

- Audio, Depth, Color, and 3D model
- Works with any Kinect application
- Best Kinect debugging tool ever

# Developing

- Skeleton is basic object for a person
- Easily distinguish between people
- Lines separated by joints

# Developing

- Voice commands build in support
- Map<"voice", function>
- Only one voice command accepted

# Potential Applications

- Lawlor Bot 2.0
- Tracking Erik Talvi 2.0
- ~~Spying on people while they sleep~~



# Things Microsoft Does with the Kinect Without Your Consent

- Spying on people while they sleep
- (Microsoft got a LOT of crap for having the Kinect 2.0 always be on for the Xbox 1)

**Questions?**

# Demo!

- Laptop cannot “Kinnect” to projector

# Sources

<http://en.wikipedia.org/wiki/Kinect>

<http://www.microsoft.com/en-us/download/>

Microsoft Kinect Developer code version 1.0  
and 1.8