

Thecasesolutions.com

The Future of Retail: From Revenue Generator to R&D Engine



Thecasesolutions.com

The Future of Retail: From Revenue Generator to R&D Engine

Concepts

- Thecasesolutions.com
- Introduction
- Augmented Reality
- Why
- Scene Generator
- Tracking System (Fusion & D2D)
- Display
- Deployment
- Video
- Assessment
- Conclusion



AR Cont. Components

Thecasesolutions.com

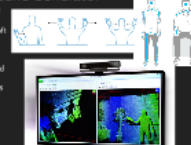
- 3 Components of AR
- Scene Generator
- Tracking System
- Display



Scene Generator

Thecasesolutions.com

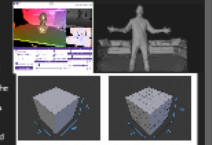
- Kinect V2 from Microsoft
- 25 points of the human body
- Hand gestures, speech and infrared depth
- 3 Dimensional data points called voxels
- Reconstructs real world within 8 meters



Kinect Fusion

Thecasesolutions.com

- Kinect Fusion is a dense surface model
- Visual holds depth data over time from multiple viewpoints
- Multiple viewpoints of the objects or environment averaged together into a single reconstruction
- Think of a large virtual cube in space on top and beside other cubes



Thecasesolutions.com Introduction

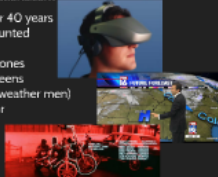
My names Josh Couturier and my new media capstone is a research project on augmenting a fitting room experience to reinvent retail for the future



Augmented Reality

Thecasesolutions.com

- Around for 40 years
- Head-mounted displays
- Mobile phones
- Green Screens (example: weather men)
- Terminator
- Iron Man
- Predator



Why?

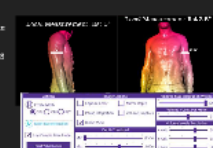
Thecasesolutions.com

- The United States has a \$1.01 Billion clothing market
- Online retail sales reached \$290.6 billion last year
- In a study of 5000 consumers, 63% say they bought clothing last year online
- 57% of consumers said they'd purchase more frequently if they had "visual try-on abilities"
- Brands between Burberry and Consumer Goods Online Sales (advertisements on Social Media)



Kinect Fusion Cont.

- Prototype Rules:
 - sensor length distance: 312" yards per meter
 - video/depth scan is 10 inches away from the sensor
 - Estimate using distance to find the width range from one visual to another



Display

- RGB high definition resolution (1920x1080p)
- USB 3 port or is compatible with Xbox One HDMI
- 32 bit or 64 bit, dual-core, 2.66 GHz (gigahertz) or faster processors
- 2GB ram
- Display holds the illusion of real world and virtual worlds in one space

Concepts

Thecasesolutions.com

- Introduction
- Augmented Reality
- Why
- Scene Generator
- Tracking System
(Fusion & D2D)
- Display
- Deployment
- Video
- Assessment
- Conclusion



Thecasesolutions.com Introduction

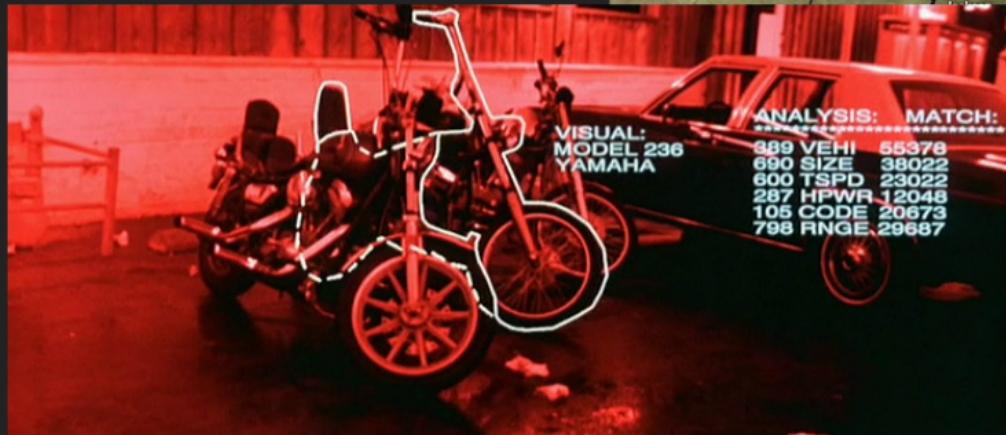
My names Josh Couturier and my new media capstone is a research project on augmenting a fitting room experience to reinvent retail for the future.



Augmented Reality

Thecasesolutions.com

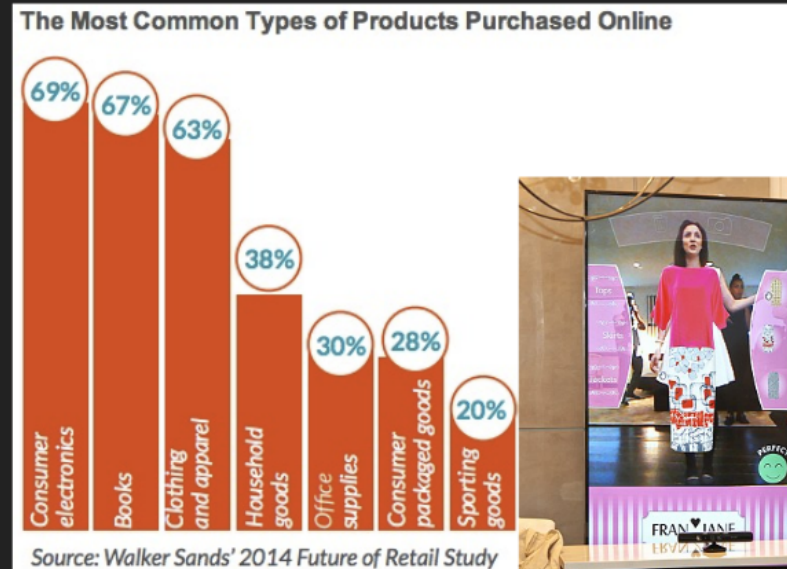
- Around for 40 years
- Head-mounted displays,
- Mobile phones
- Green Screens (example:weather men)
- Terminator
- Iron Man
- Predator



Why?

Thecasesolutions.com

- The United States has a \$331 Billion clothing market.
- Online retail sales reached \$210.6 Billion last year
- In a study of 1000 consumers, 63% say they bought clothing last year online
- 37% of consumers said theyd purchase more frequently if they had “visual try-on abilities”
- Bonds between Brand and Consumer push Online Sales (Advertisements on Social Media)



AR Cont. Components

Thecasesolutions.com

3 Components of AR

- Scene Generator
- Tracking System
- Display



```
File Edit View Refactor Project Build Debug Team Data Tools .NET Reflector Test Analyze Window Help
Debug Any CPU Document
New Work Item
UserProfileProperties.xml Program.cs
UserProfileProperties.xml
using System;
using Microsoft.Office.Server.UserProfiles;
using Microsoft.SharePoint;
using Microsoft.SharePoint.Taxonomy;
using System.Xml;
using System.Collections;

namespace UserProfilePropertiesOMApp
{
    class Program
    {
        static void Main(string[] args)
        {

            string str = "UserProfileProperties.xml";

            XmlDocument doc = new XmlDocument();
            doc.Load(str);
            Console.WriteLine(doc.FirstChild.Name);

            XmlNode xmlNode = doc.DocumentElement;

            XmlNodeList propertiesXmlNodeList = doc.GetElementsByTagName("Properties");
            Console.WriteLine(propertiesXmlNodeList.Count);
        }
    }
}
```

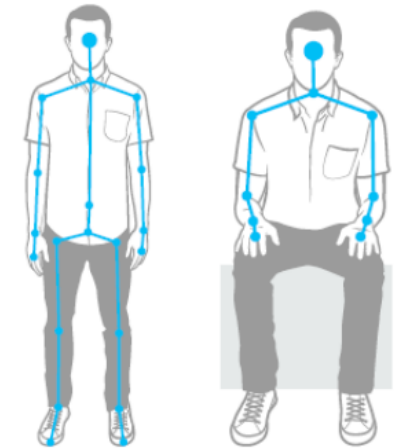
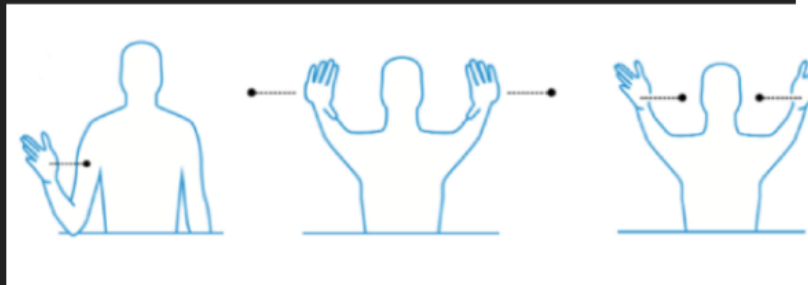


Scene Generator

Thecasesolutions.com

Xbox Kinect V2 from Microsoft

- 25 points of the human body
- hand gestures, speech and infrared depth
- 3 Dimensional data points called Voxels
- Reconstructs real world within 8 meters.

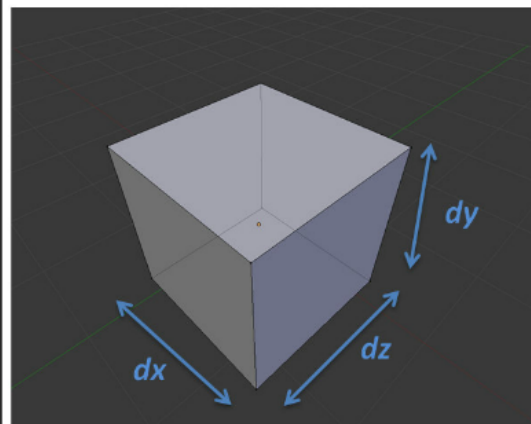
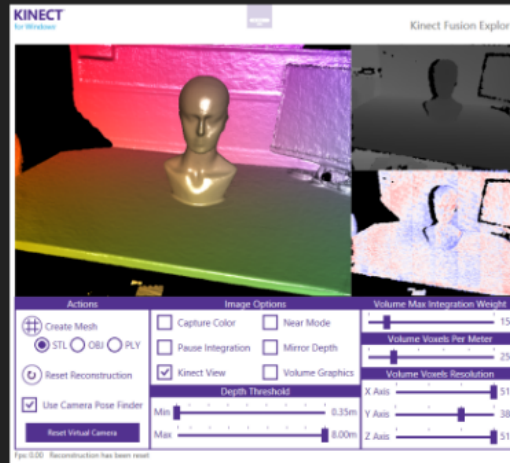


Thecasesolutions.com

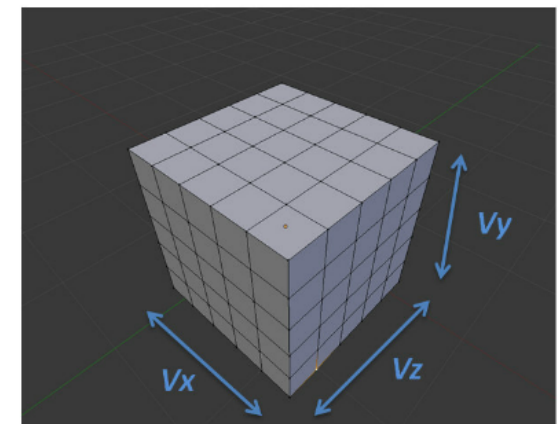
Kinect Fusion

Kinect Fusion C#

- reconstructs a dense surface model
- Voxel holds depth data over time from multiple viewpoints
- multiple viewpoints of the objects or environment averaged together into a single reconstruction
- Think of a large virtual cube in space on top and beside other cubes



$$dx = dy = dz = 3 \text{ [meters]}$$



$$Vx = Vy = Vz = \{32, 64, 128, 256, 512\} \text{ [voxels]}$$