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Punch Up In the Potash Industry (B): BHP Billiton Ltd - Resourcing the Future or Mining Their Own Grave?

Concepts

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



AR Cont. Components

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



Scene Generator

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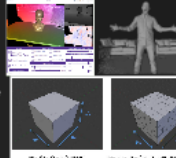
- Xbox Kinect V2 from Microsoft
- 25 points of the human body
 - hand gestures, speech and infrared depth
 - 3 Dimensional datapoints called Voxel
 - Reconstructs real world within 8 meters



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- ### Kinect Fusion
- 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

Kinect Fusion



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

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



Why?

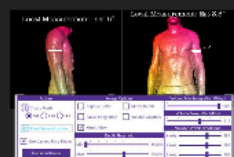
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- The United States has a \$331 Billion clothing market.
- Online retail sales reached \$210.6 Billion last year
- in a study of 1000 consumers, 63% say they bought clothing last year online
- 37% of consumers said they'd purchase more frequently if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



Kinect Fusion Cont.

- Prototype Rules
- 3m length distance
 - 512 voxels per meter
 - 180° front scan is 18 inches away from the sensor
 - Estimate using division to find the width range from one Voxel to another:



Concepts

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Thecasesolutions.com Introduction

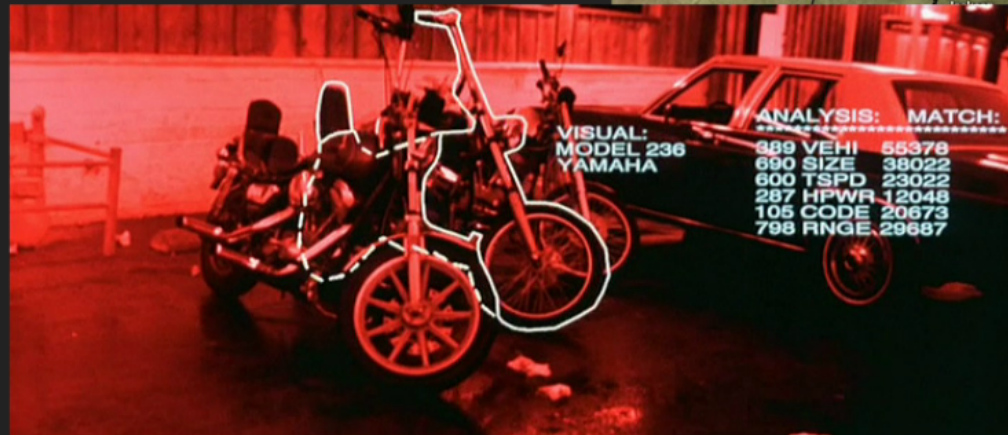
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Augmented Reality

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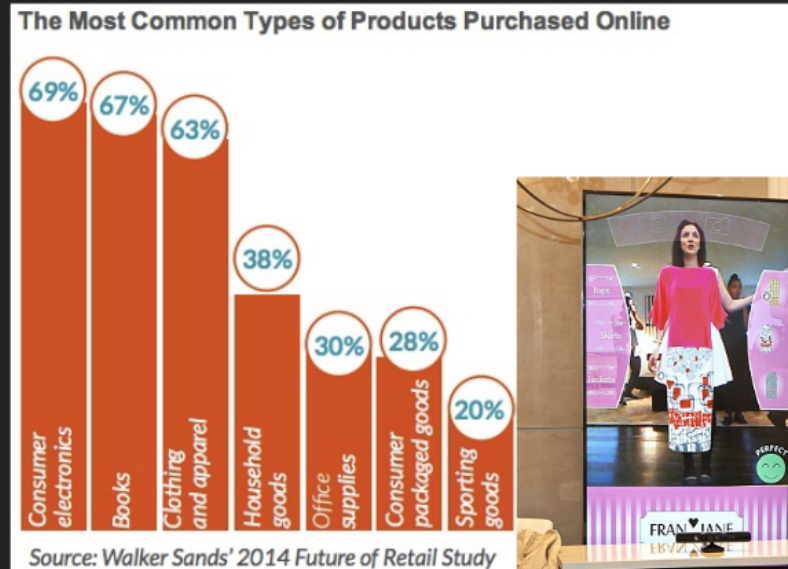
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Why?

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AR Cont. Components

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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
UserProfilesOMApp.Program
UserProfilesOMApp
using System;
using Microsoft.Office.Server.UserProfiles;
using Microsoft.SharePoint;
using Microsoft.SharePoint.Taxonomy;
using System.Xml;
using System.Collections;

namespace UserProfilesOMApp
{
    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;

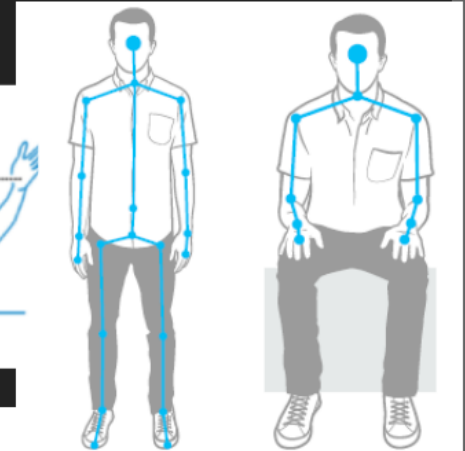
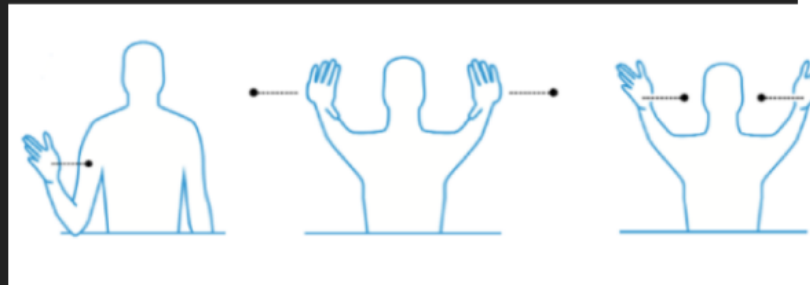
            XmlNodeList propertiesXmlNodeList = doc.GetElementsByTagName("Properties");
            Console.WriteLine(propertiesXmlNodeList.Count);
        }
    }
}
```

Scene Generator

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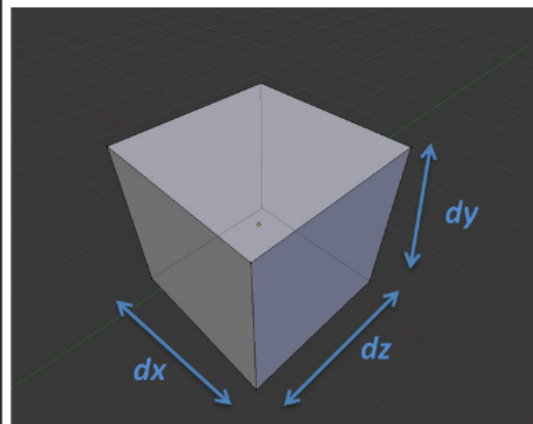
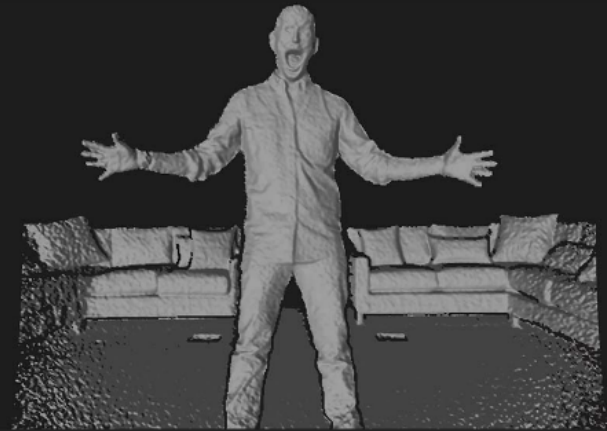
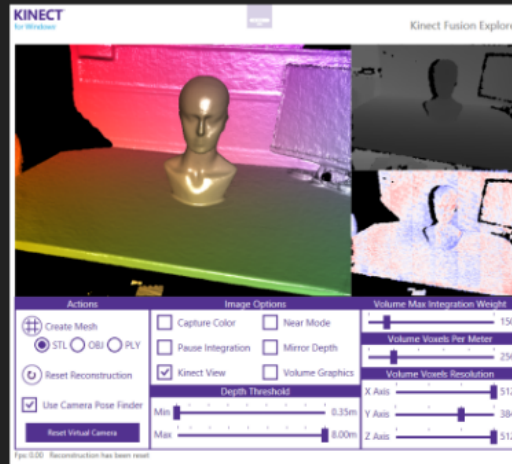


Kinect Fusion

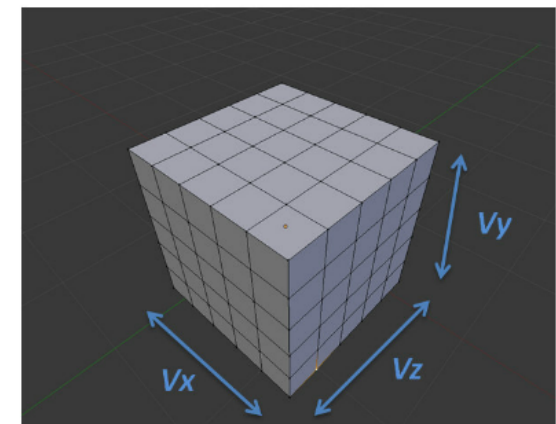
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Kinect Fusion C#

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



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