

# Preview of Virtual Reality

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VR 세계 REVIEW

# Virtual Reality Topics

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## ◆ Key Elements for Virtual Reality

- Virtual World
- Immersion
- Sensory Feedback
- Interactivity

## ◆ Dominant Technologies for Virtual Reality

- Tracking Technologies
- Display & Graphic Technologies
  - Hardware - Display Equipments
  - Software - Computer Graphics
- Interactive Technologies
  - Haptic & Others

# Introductory Video Clip

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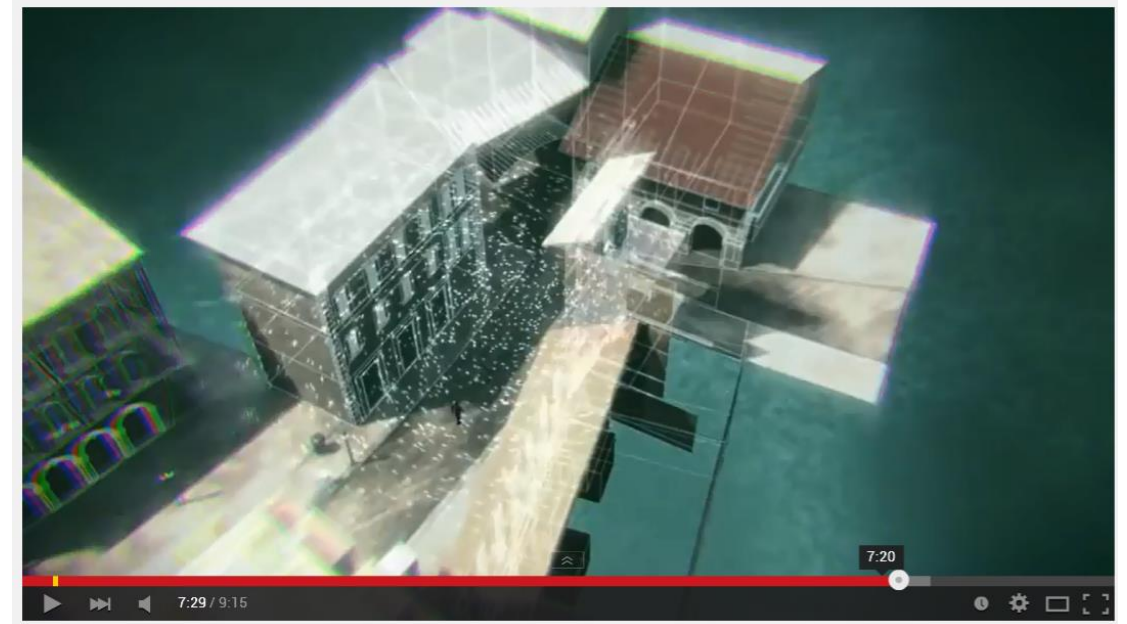
- ◆ YouTube: <https://www.youtube.com/watch?v=VzFpg271sm8>
  - Title: World Builder
  - Production: Bruce Branit
  - Running Rime: 9 min. 15 sec.

# 1<sup>st</sup> Key Elements for VR: Virtual World

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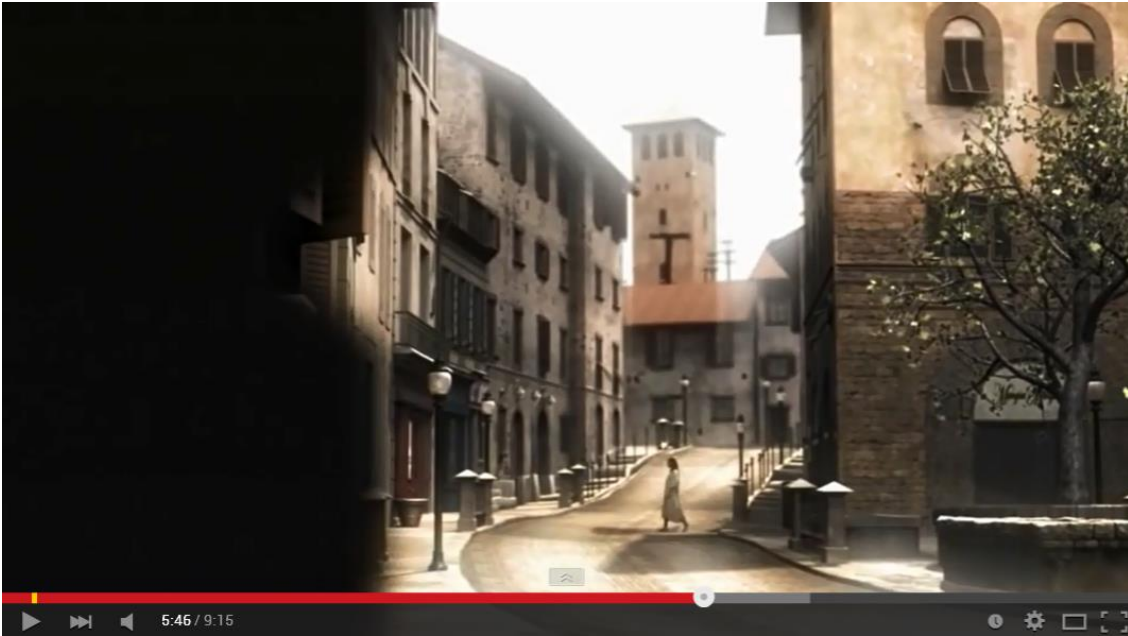
**Creation of Virtual World**



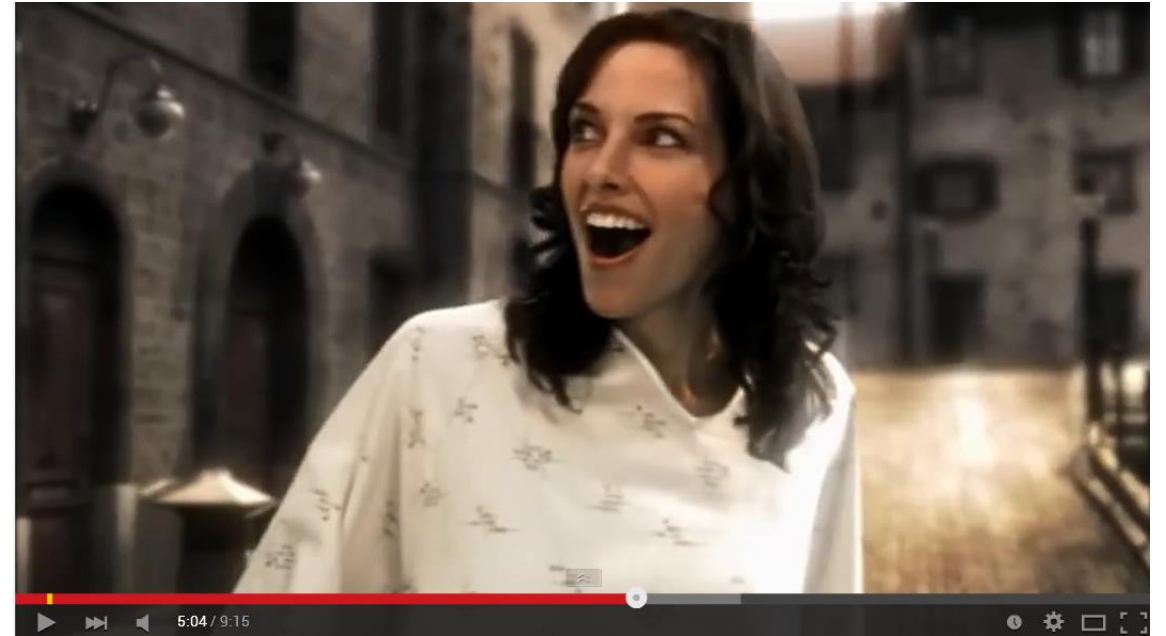
**Destruction of Virtual World**

# 2<sup>nd</sup> Key Elements for VR: Immersion

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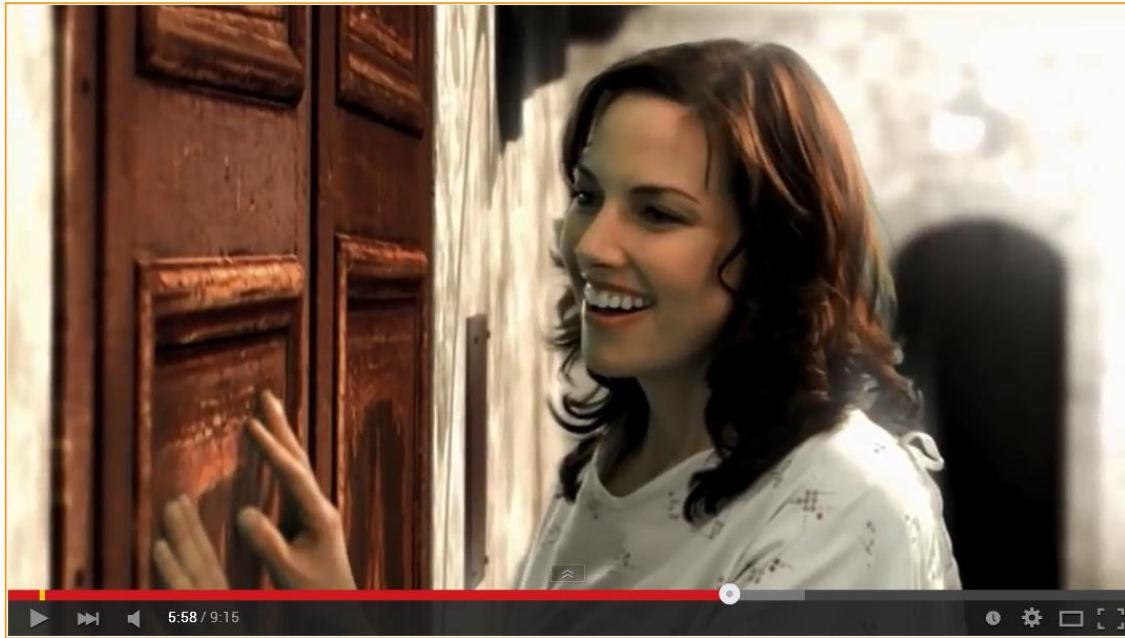
**Physical Immersion:  
Surrounded by Virtual Objects**



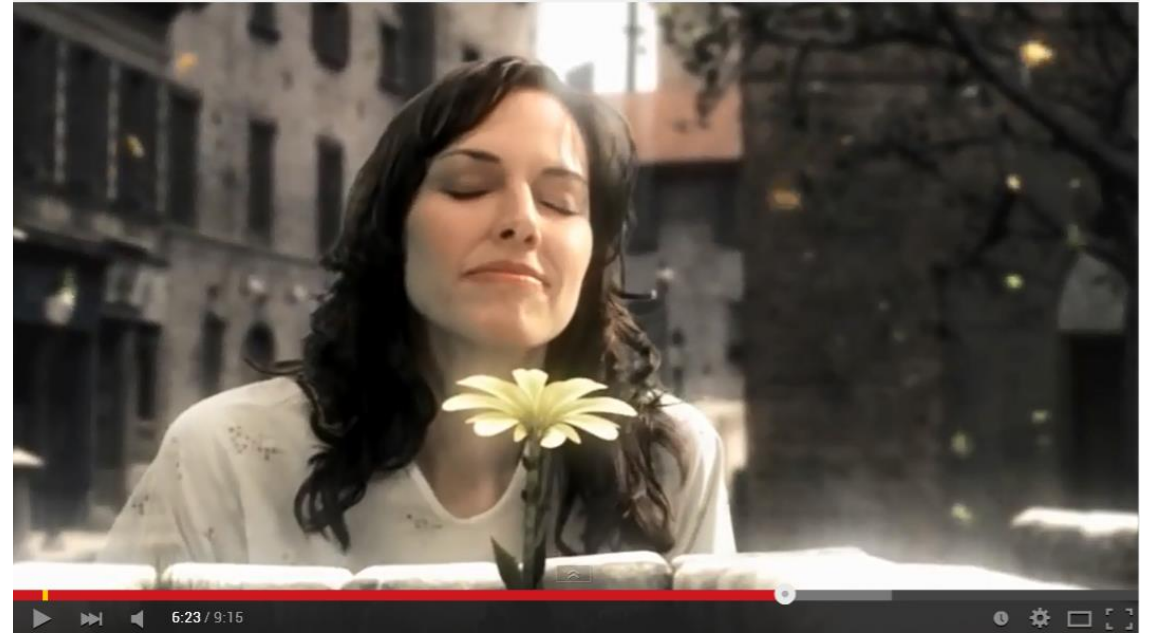
**Mental Immersion:  
Involvement**

# 3<sup>rd</sup> Key Elements for VR: Sensory Feedback

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**Human 5 Senses:  
Vision & Touch Sensation**



**Human 5 Senses:  
Auditory & Olfactory Sensation**



# 4<sup>th</sup> Key Elements for VR: Interactivity

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**Respond to user actions**



**Move physically within the world**

# 1<sup>st</sup> Dominant Technology for VR: Tracking

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**Tracking Head, Body & Hand**



**Eye Detection**



# 2<sup>nd</sup> Dominant Technology for VR: Display(HW)

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**Seeing Virtual World & Virtual Objects**



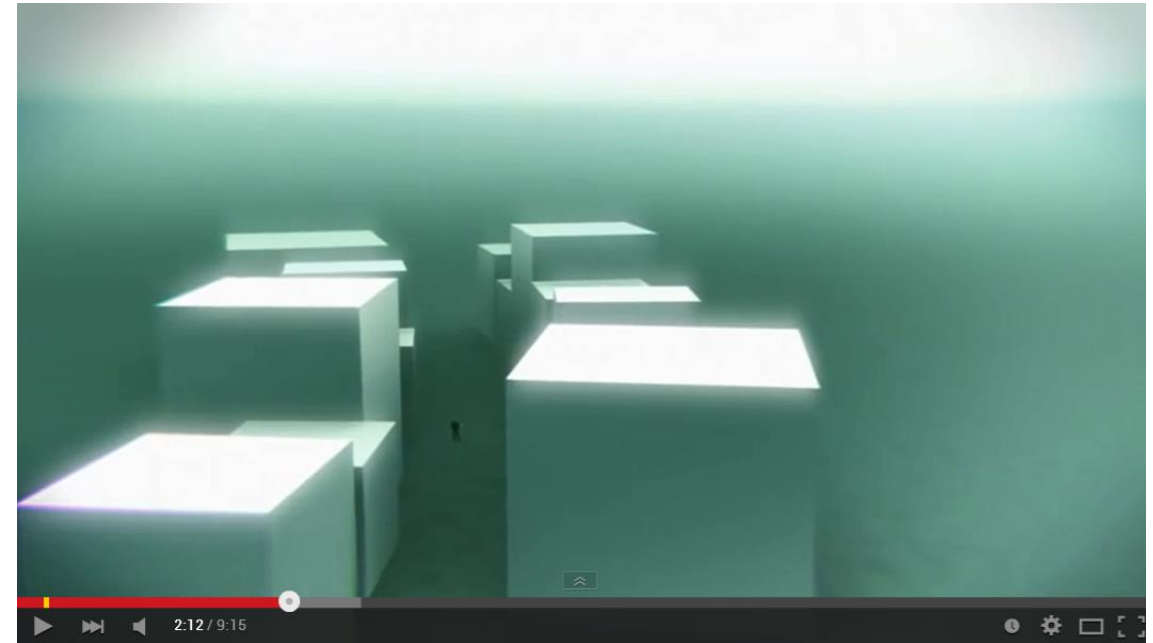
**With Naked Eye?**

# 2<sup>nd</sup> Dominant Technology for VR: Computer Graphics(SW)

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**Modeling**



**Perspective Projection**

## 2<sup>nd</sup> Dominant Technology for VR: Computer Graphics(SW)

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**Shading: Coloring**

# 2<sup>nd</sup> Dominant Technology for VR: Computer Graphics(SW)

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**Shading: Texture Mapping**



## 2<sup>nd</sup> Dominant Technology for VR: Computer Graphics(SW)

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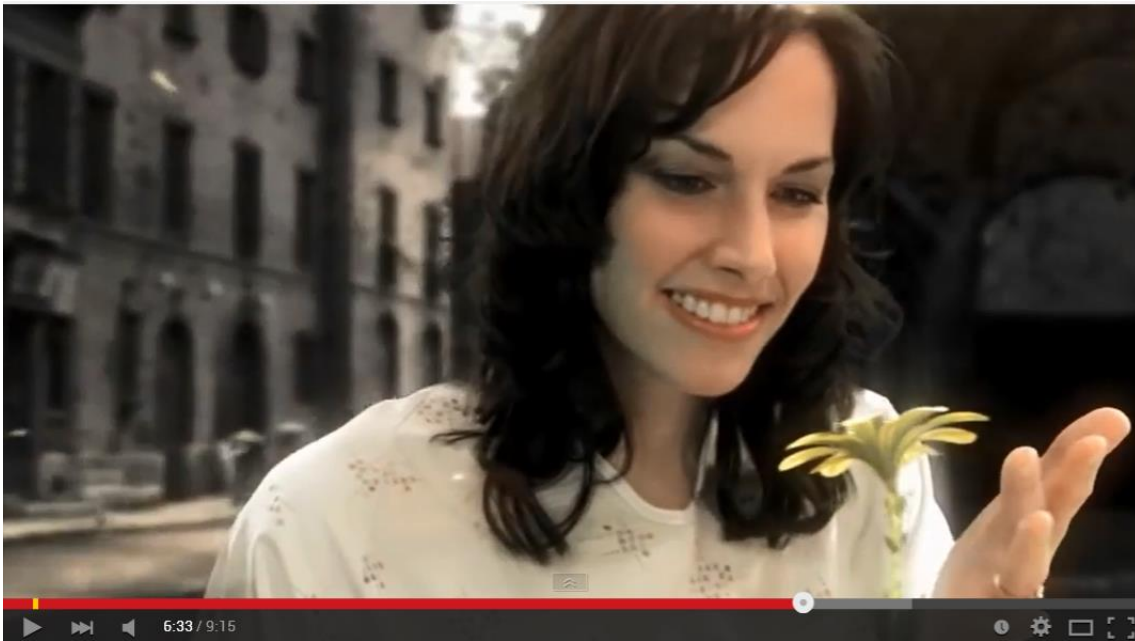


**Shading: Applying Light Source**



# 3<sup>rd</sup> Dominant Technology for VR: Interaction- User Side

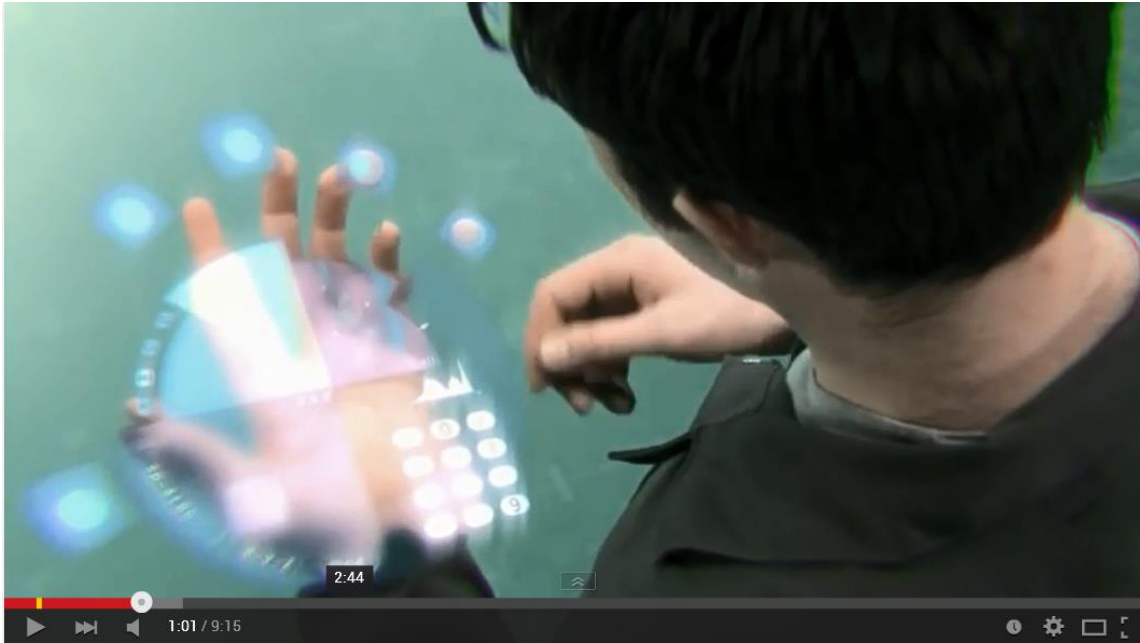
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**Interacting with Virtual World & Virtual Objects  
With Bare Hands?  
Without Any Extraordinary Equipments?**

# 3<sup>rd</sup> Dominant Technology for VR: Interaction- Developer Side

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**Creating Interactive Virtual World & Virtual Objects  
New Tools for Developers**

# 3<sup>rd</sup> Dominant Technology for VR: Interaction- Developer Side

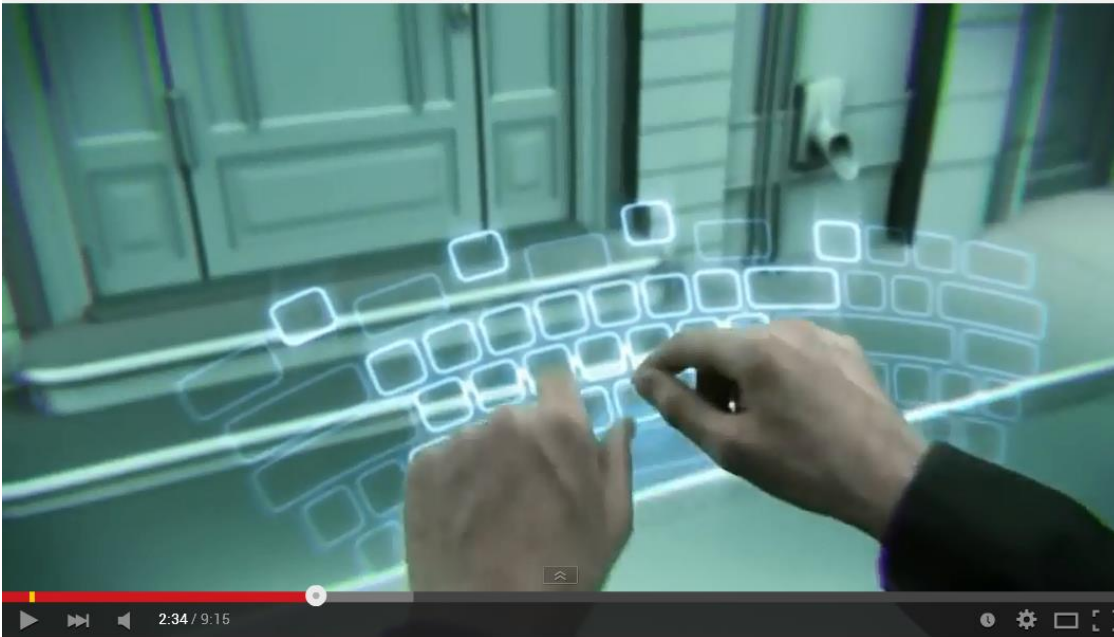
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**Creating Interactive Virtual World & Virtual Objects**  
**New Way of Creating Objects for Developers**

# 3<sup>rd</sup> Dominant Technology for VR: Interaction- Developer Side

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**Creating Interactive Virtual World & Virtual Objects**  
**New Way of Producing Data for Developers**

# Questions?

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