virtual reality
虚拟现实

VIVE

Immersion Interaction imagination
沉浸　　交互　　构想

概念 Concept　Technology 技术

1950s
development
1960s

Morton Heilig's
莫顿海利格

"Sensorama"
（概念上的第一台VR设备）

sight,sound,smell,touch
视觉，听觉，嗅觉，触觉

IvanSutherland's
伊凡·苏泽兰

"Sword of Damocles"
(第一台将头显连接到计算机的VR设备)

it was so heavy and primitive that it had to be suspended from the ceiling.
这种头戴式显示器相当原始，也相当沉重，不得不被悬挂在天花板上

文化发展
Cultural development

1990s → 2018
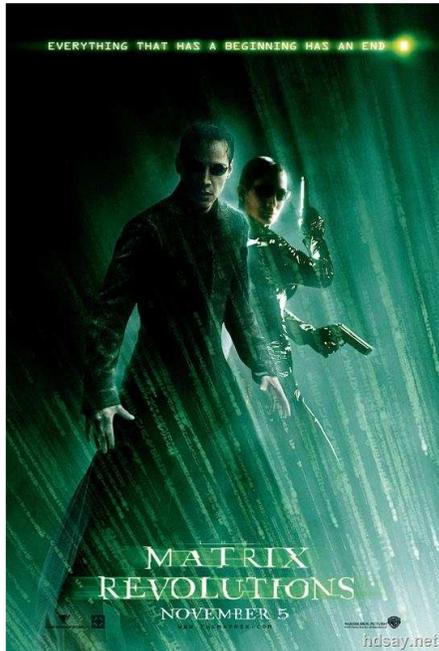
"The Matrix"
《黑客帝国》

Concepts tend to be similar
VR概念趋于大同

"Ready Player One"
《头号玩家》

设备发展
Equipment development
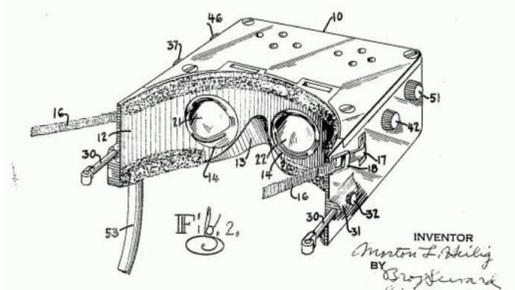
Sega VR（1993）

Forte VFX-1（1995）

任天堂 VisualBoy（1995）

Philips Scuba VR（1997）


1950s-

1990s-

2000s-

趋势
Trend

VR 技术成熟度曲线

曝光度

期望膨胀
Peak of Inflated
Expectations

稳定生产
Plateau of Productivity

启蒙期
Slope of Enlightenment

泡沫破灭
Trough of Disillusionment

新技术诞生
Technology Trigger

1950s
-
1960s   1990s   2000s   2010s   2020s

技术成熟度曲线（The Hype Cycle）

曝光度

过高期望的峰值
Peak of Inflated
Expectations

实质生产的高峰期
Plateau of Productivity

稳步爬升的光明期
Slope of Enlightenment

泡沫化的底谷期
Trough of Disillusionment

科技诞生的促动期
Technology Trigger

技术成熟度 / 时间轴
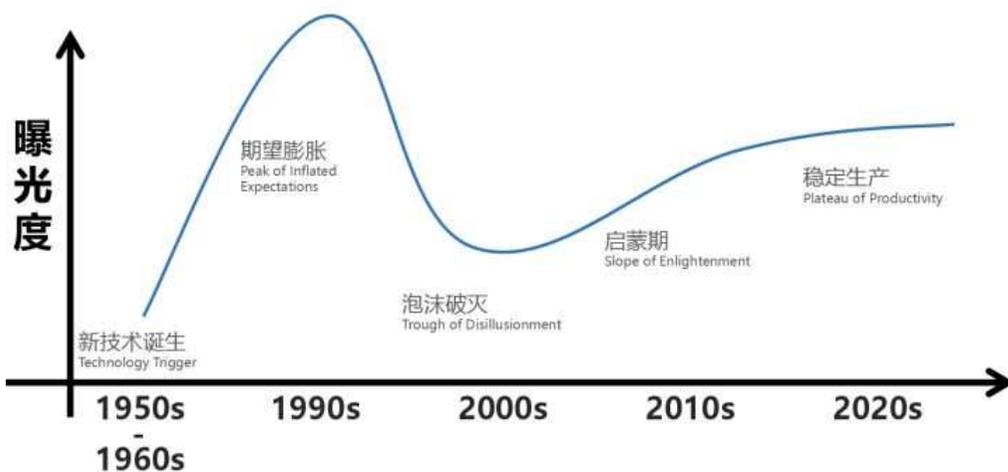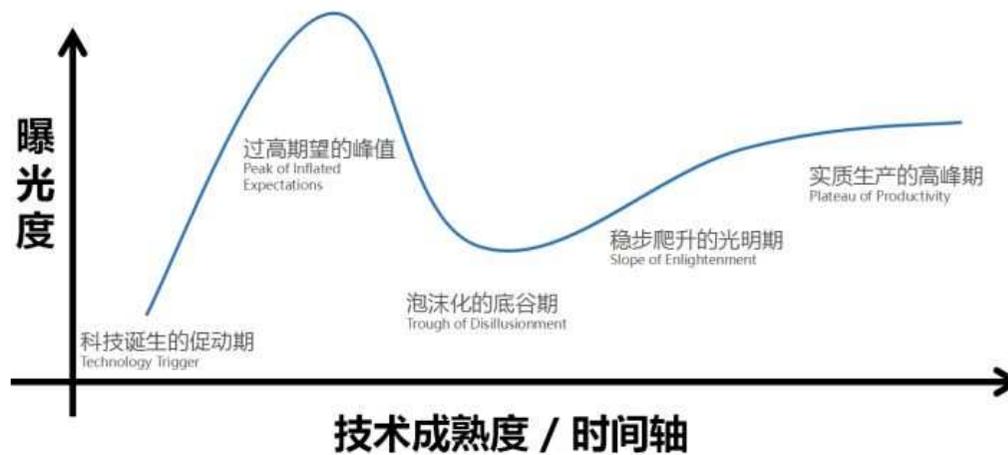
应用
Applications

课堂教学
Classroom teaching

商业营销
Business marketing

科研教学
Research Teaching

影视
film and television

产品设计
product design

文物保护
Heritage protection

网络直播
webcast

自动驾驶
Autopilot

数字展馆
Digital Pavilion

运维巡检
O & M inspection

线下主题馆
Offline Theme Pavilion

安全消防
Fire safety

游戏
Game

"Beat Saber"
《节奏光剑》
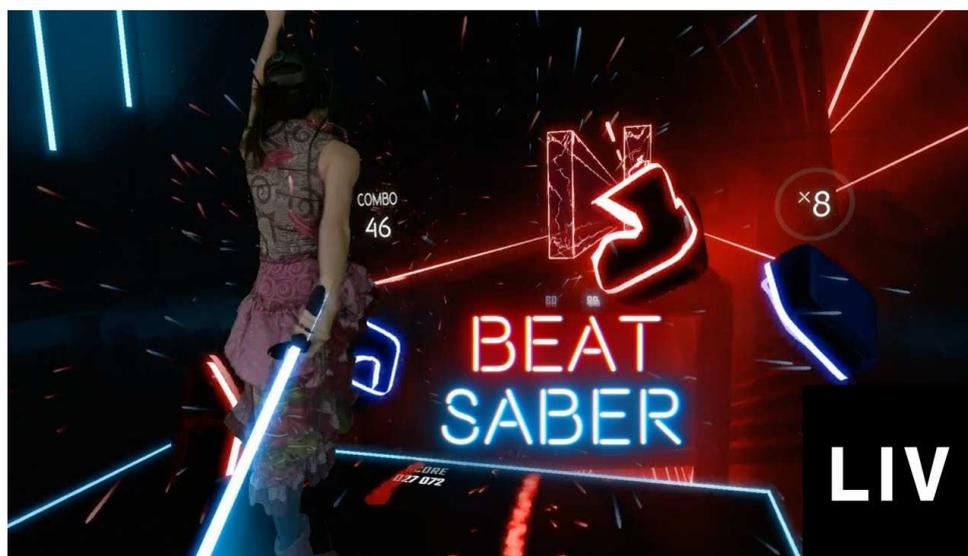
"Half-Life: Alyx"
半衰期(半条命)：爱莉克斯
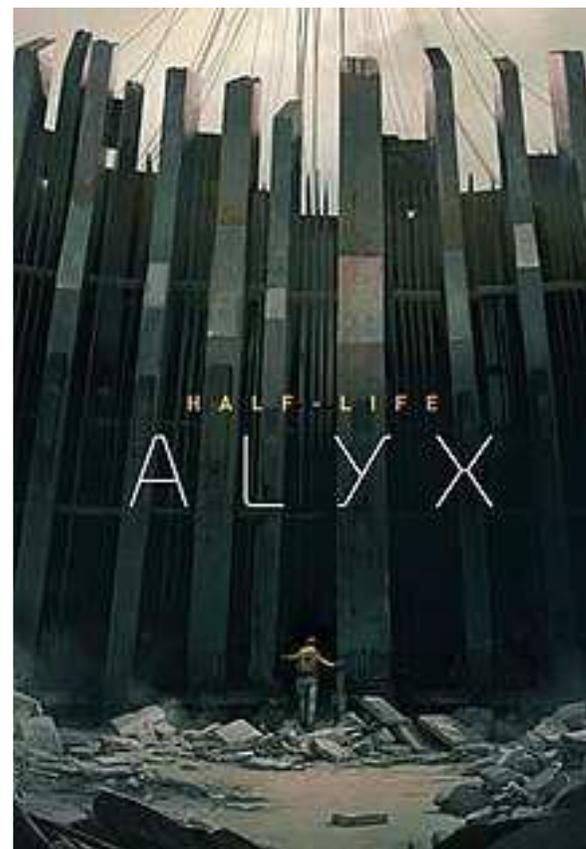
设备
Equipment
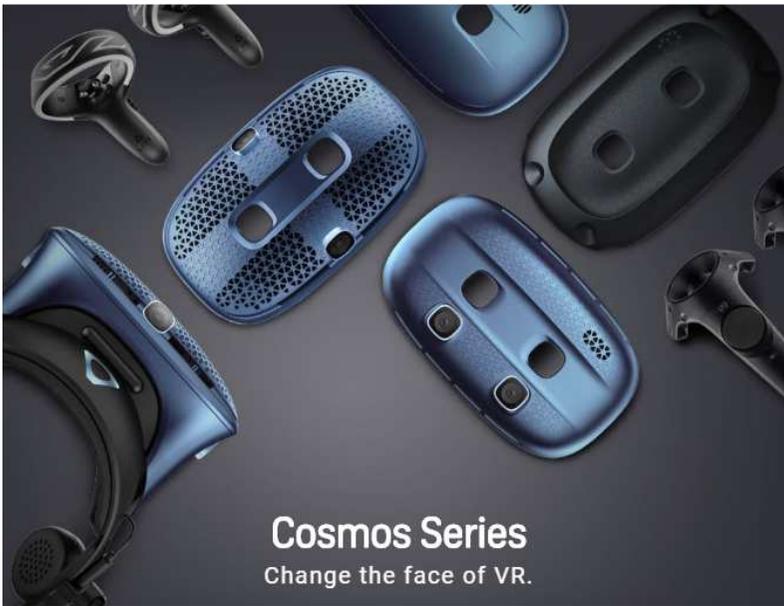
开发
Development

Processing

最主流的VR开发引擎
The most mainstream VR development engine

unity

UNREAL
ENGINE

CRYENGINE®

Processing for Android

https://android.processing.org/tutorials/vr_intro/index.html

Unity3D —— VR (steamVR)

https://unity3d.com/cn/unity/features/multiplatform/vr-ar —— Unity3D Website

https://blog.csdn.net/caodongfang126/article/details/54134121 —— Unity3D VR preparation
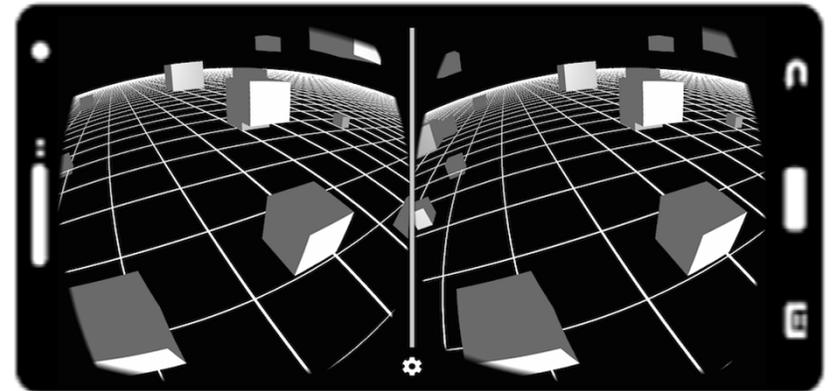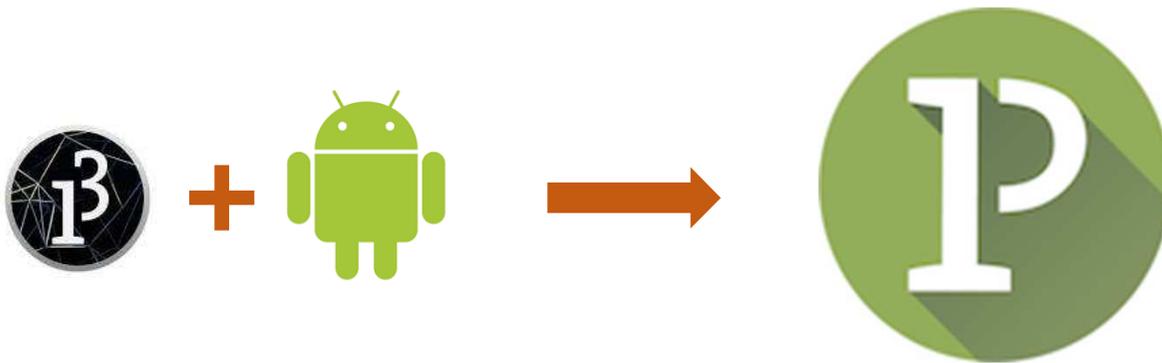
https://www.youtube.com/watch?v=3tOsaPO56vg —— Unity3D VR introduce (Youtube)
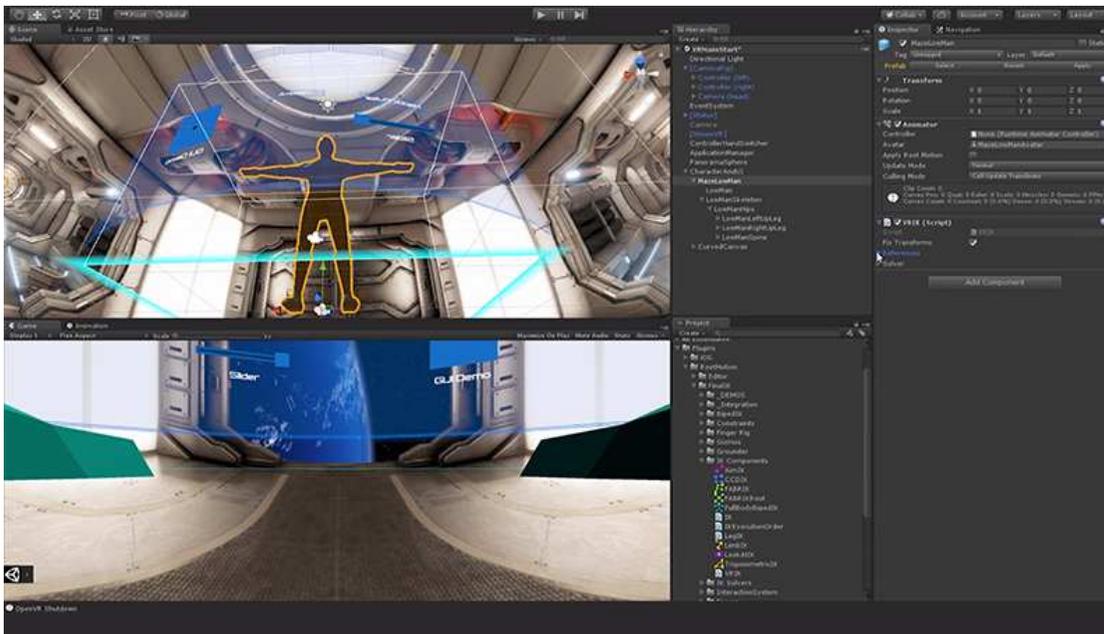
UE4 —— VR

—— UE4 website Chinese type

HUD UI with 3D
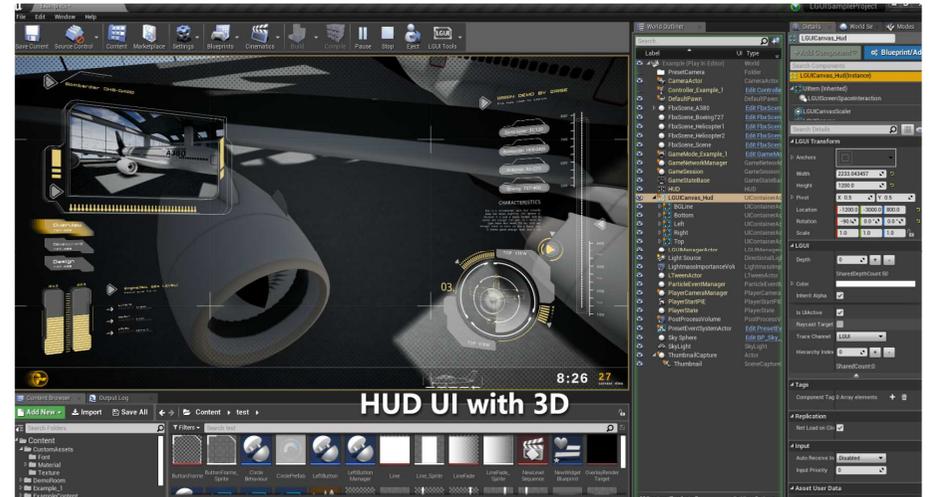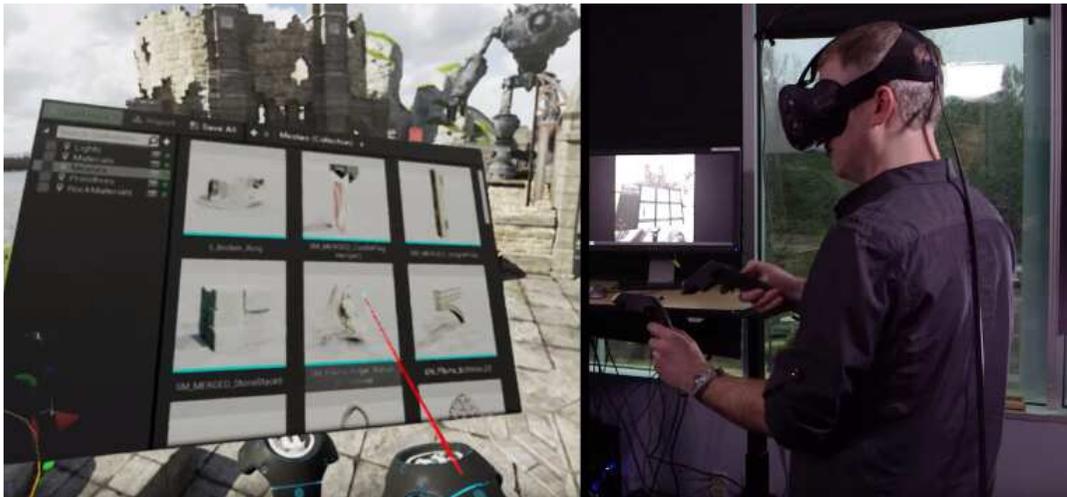
CryEngine —— VR

—— CryEngine website

Enjoy yourself .