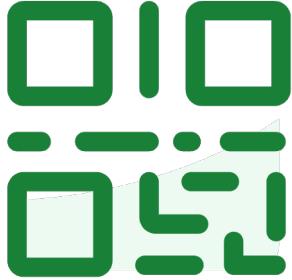


Introduction

Notes for the SIT-DP module: **Developing Immersive Applications**

Created by: Chek Tien TAN





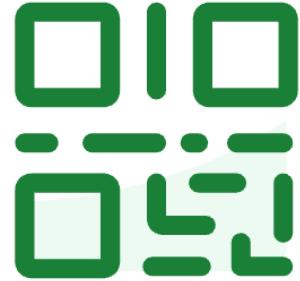
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What is your goal at the end of this module?

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Roughly how many days a week do you use some form of XR? (VR on Quest, AR on mobile, XREAL screen augmentation, etc.)

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The usual mambo jambo... (see GitHub)

- learning outcomes
- assessments
- weekly learning activities
- attendance taking

What to expect...

- expect changes
- learning content is free and vast
- we're facilitators, not teachers
- is this a “coding” or “design” module?
 - what is unique about coding for VR, AR, etc...



Changes based on feedback

- still a core module for your industry
- in-person with lecture notes
- more industry!
- revamped TP scope + deadline
- revamped nature of IPA

a lot of students burnt out this semester due to mixture of GAM and other modules that are very project based.

exposure to tools like WebXR means that my constraint of not having an XR-ready device at the ready for testing is mitigated

should be an elective rather than core module

more on-site lectures rather than using online zoom meeting

[what I find useful:]
interviews with industry people...
real world case studies



17% response rate...

Who are we?

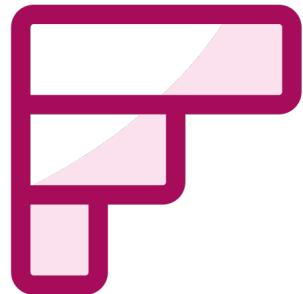
- Chek is a researcher in (Immersive) HCI

Centre for
IMMERSIFICATION

- And forthcoming industry adjuncts ...

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**What do you feel will be most useful for learning in
this module? Rank from the most useful to least
useful element.**

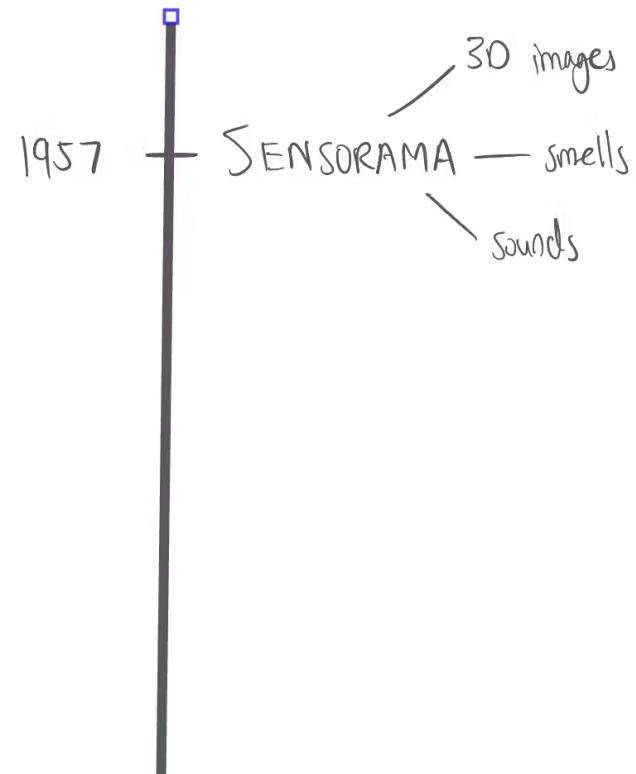
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Some suggestions on learning strategy...

- focus on translating design to code, and not focus on code
- make the best of learning a Web stack
 - we have no affiliations with WebXR or BabylonJS
 - it provides accessibility: 230+ students
 - XR does not require VR or AR headsets
- interact with us (and others)
- find the right motivation to learn



HISTORY XR

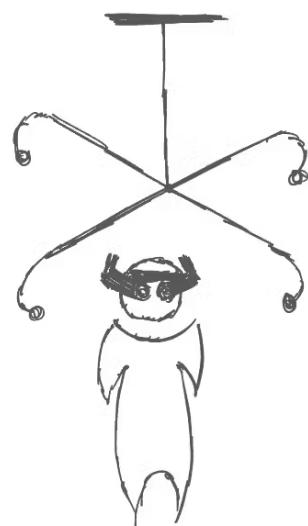


<https://youtu.be/zf61nlyBC3M>

1968

THE SWORD OF DAMOCLES

THE FIRST HMD



<https://youtu.be/AFqXGxKsM3w>

1987 -

EYEPHONE + DATA GLOVE

"Virtual Reality" coined
by Jaron Lanier, VPL Research



<https://youtu.be/wSomPwfH5eQ>

1991 -

VIRTUALITY 1000
by the Virtual Group

stereoscopic 3D

multiplayer

1993 -

SEGA VR
1st goggles-styled

head tracking

stereo sound
LCD screen

1994 -

SEGA VR-1
Arcade in
Segaworld

3D polygon graphics

motion simulator



<https://youtu.be/ojutHp6RnPU>

1995

NINTENDO VIRTUAL BOY
1st portable stereoscopic 3D
game console



<https://youtu.be/17euo2DzBZI>



Nintendo Labo VR Kit
<https://www.nintendo.com>

2012 - Oculus RIFT DK1
by Palmer Luckey
/ \
lightweight good stereo 3D



<https://youtu.be/DhcOMOWRMnA>

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Guess the price of the original Oculus DK1?

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2014 - GOOGLE CARDBOARD
(and FB purchased Oculus)

/
cheap

\
use existing
smartphones



<https://youtu.be/SxAj2lyX4oU>

2015 - SAMSUNG GEAR VR

2016 -
HTC VIVE
Oculus RIFT
PLAYSTATION VR
:
:



<https://youtu.be/i1r76omNeI8>

WHAT R?



VR



AR



MR

XR?

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**Describe briefly, what is the
difference between AR and MR?**

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extended reality definition



All

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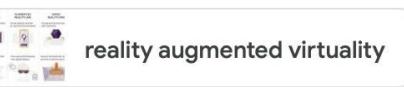
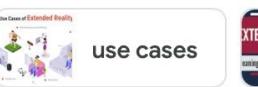
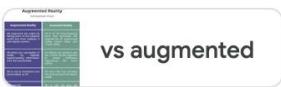
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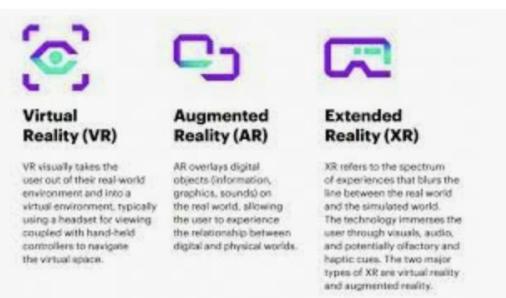
FourWeekMBA

Extended Reality: Definition, Use Cases ...



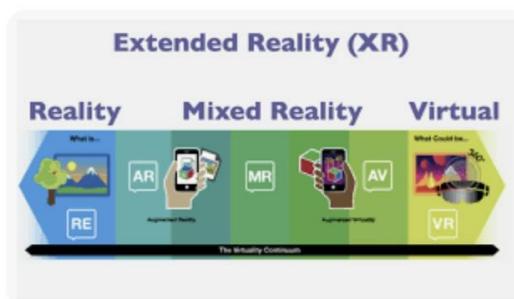
SaM Solutions

XR (Extended Reality) and Its Use Cases ...



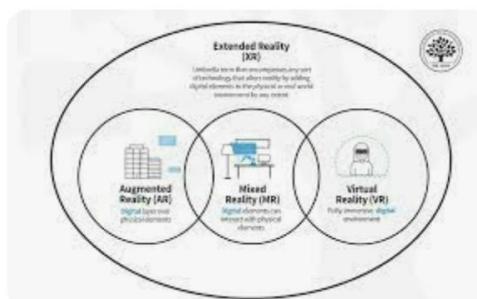
Accenture

The wonders of Extended Reality ...



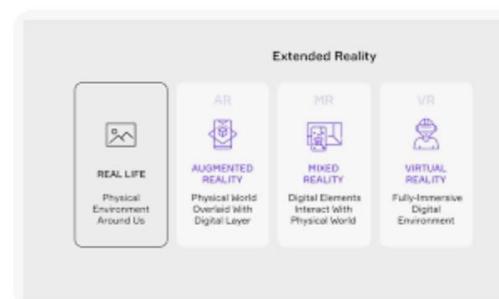
XR PEDAGOGY

XR PEDAGOGY - What is XR?



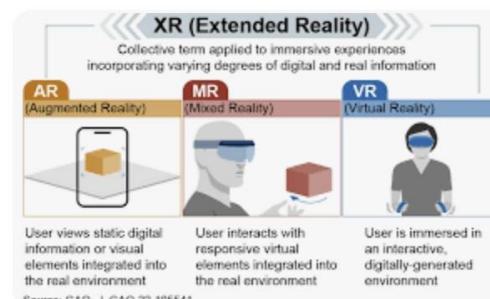
Interaction Design Foundation

What is Extended Reality (XR)? | IxDF



Sensorium

What Is Extended Reality - XR Explained



Government Accountability Office

Extended Reality Technologies ...

Immersive Media

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So what is XR again?

- means to communicate
- convergence of consumer devices
- BUT there is much more to immersive experiences...

New Technique Could Enhance Films for Visually Impaired

News Published: November 2, 2021 | [Original story from the University of York](#)



The Immersive Audio Dome at the University of York Audiolab is key to developing the 3D audio strategy. Credit: University of York/Department of Theatre, Film, Television and Interactive Media

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VR

Immersification – a fresh dimension to learning design

Many online courses can benefit from immersive technologies to enhance student learning experiences. Here Chek Tien Tan and May Lim outline their innovative method for ensuring that the technology chosen supports the desired learning outcomes

[Edtech](#)[Course design and delivery](#)[Asia](#)[Feature article](#)**Chek Tien Tan, May Lim**

Singapore Institute of Technology

🕒 23 Dec 2020



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Different requirements \Rightarrow different implementations

