



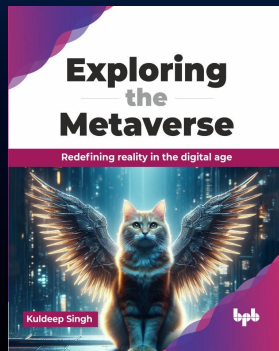
DJ  HACK

Fostering Artificial Sense in the Real World

Kuldeep Singh

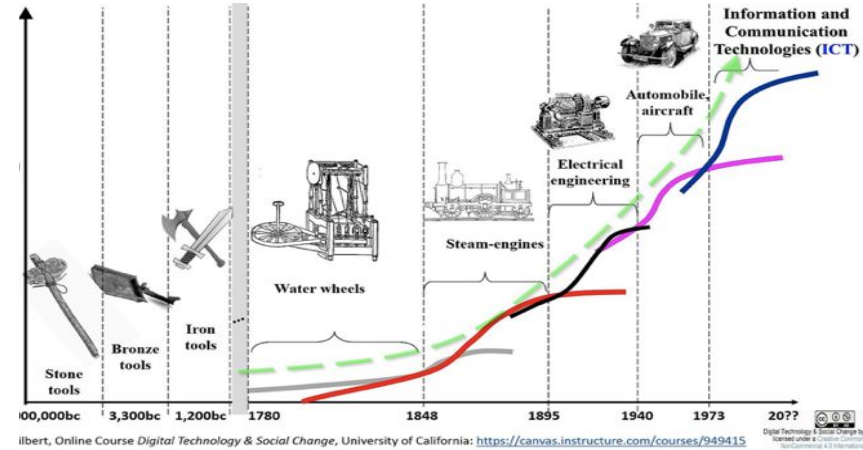
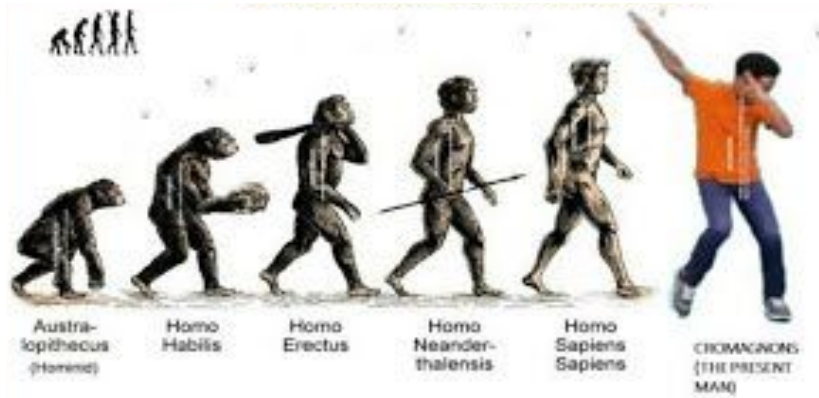
Global Emerging Technologies Leader

 **thoughtworks**



thinkuldeep.com





Understanding the XR world

AI Powered XR - Developing the artificial sense

Communicate with artificial sense

Work with artificial sense

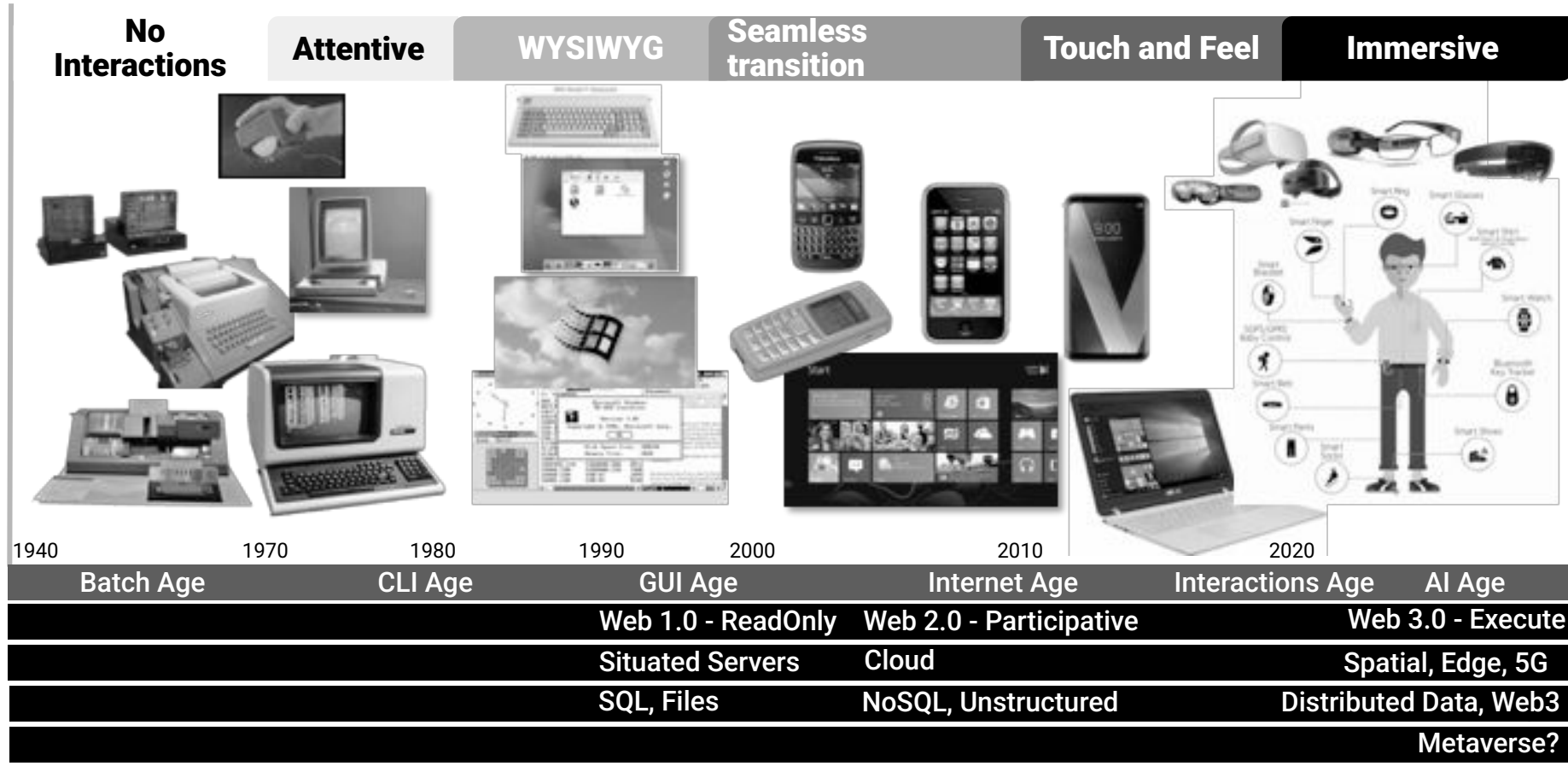
Go beyond with artificial sense

Nothing is without cost, the way forward.

History and Future

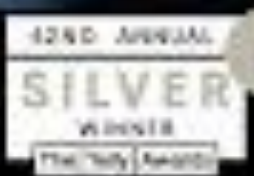
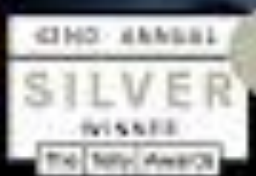


Chapter 1





Linden Lab




XR World

Extended Real World - Reality redefined

/thoughtworks



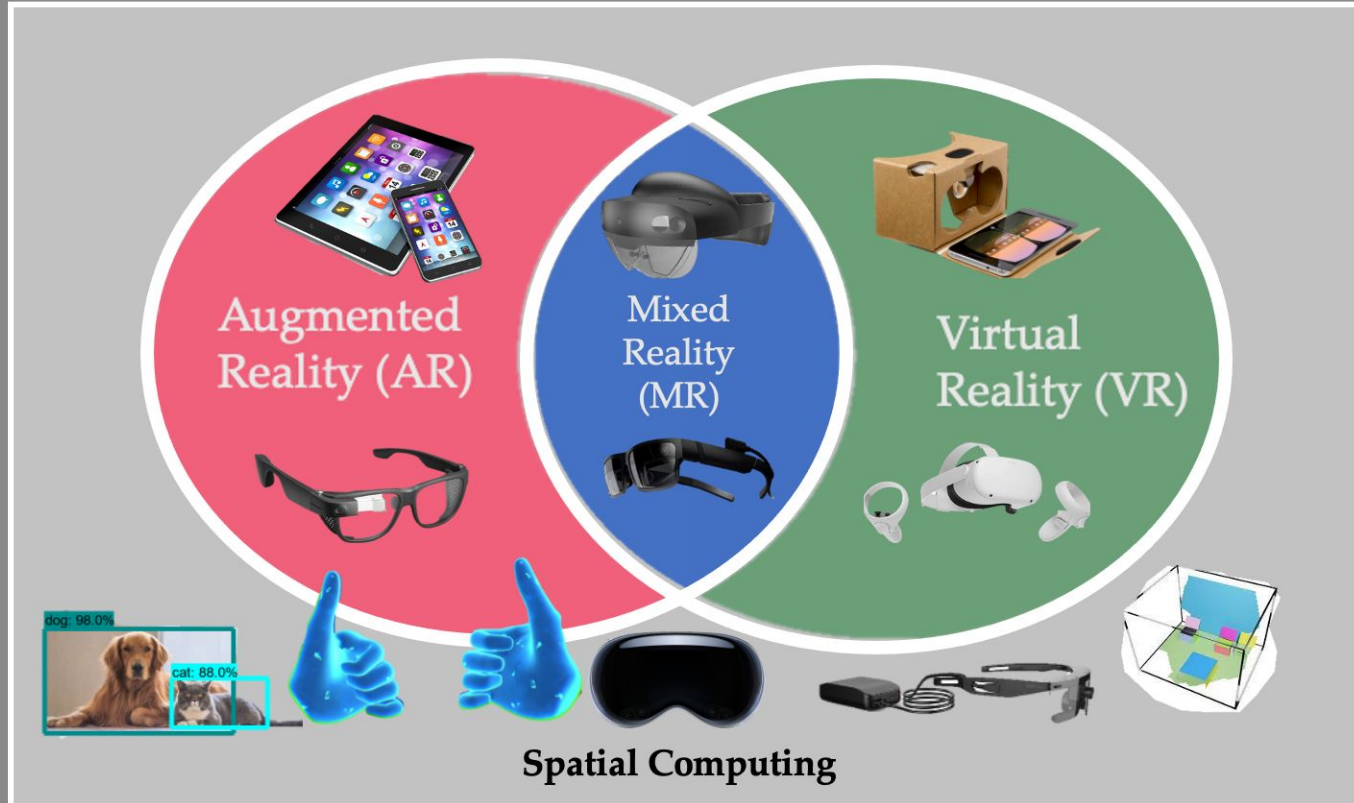


A man in a light blue button-down shirt and a striped tie stands in an office setting. He has a name tag that says "Guy" on his left chest. The background shows office windows with blinds and a wall sconce.

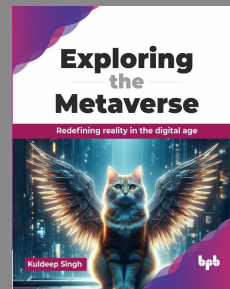
FREE GUY

**OFFICIAL
TRAILER**

eXtended Reality (XR)

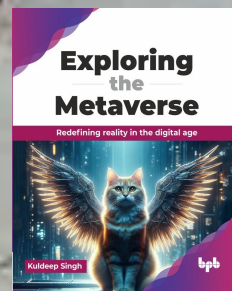


Chapter 3

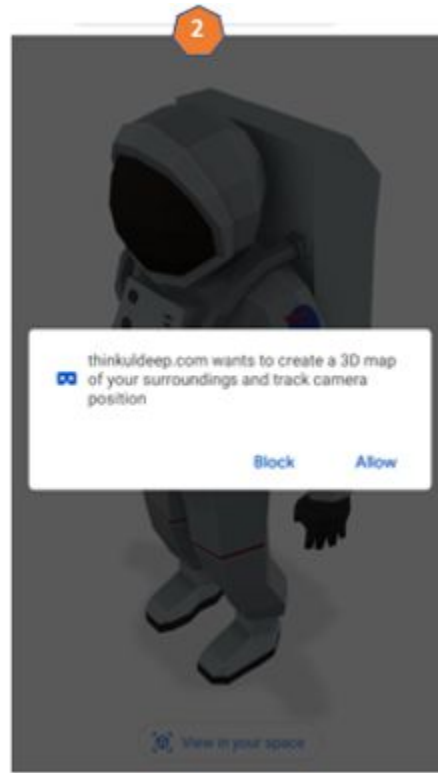




Chapter 3

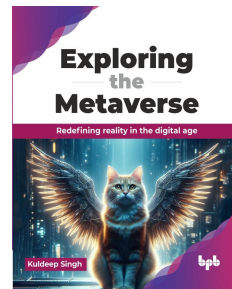


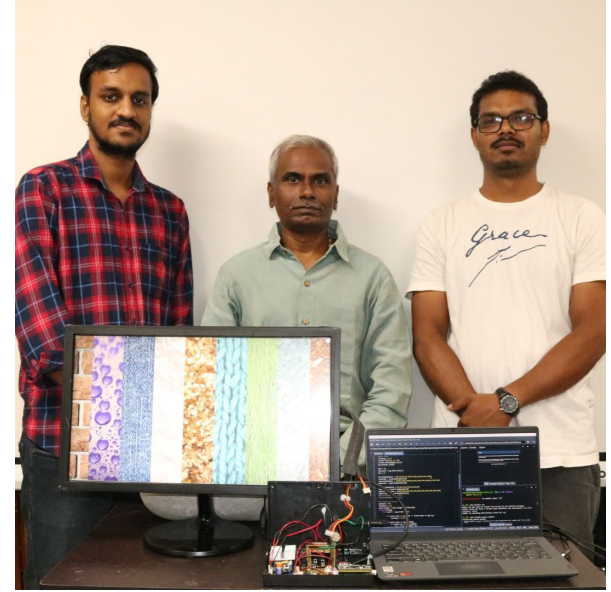
WebXR



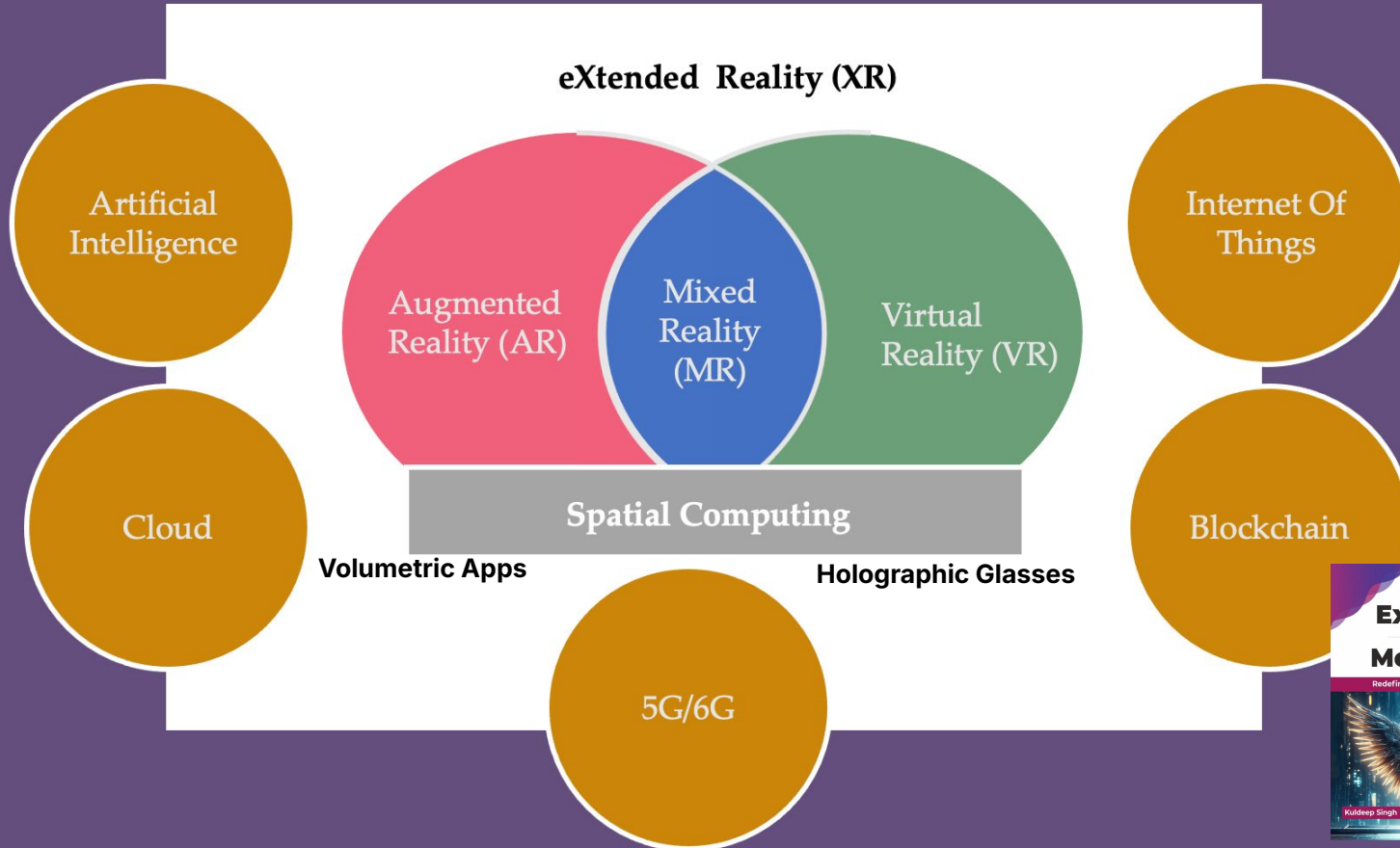
<https://thinkuldeep.com/modelviewer/>

Chapter 3





Metaverse

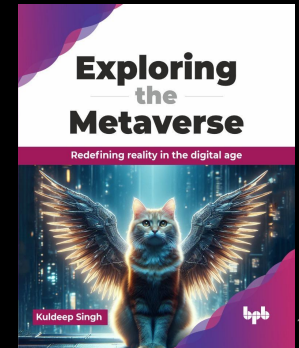


Part 2

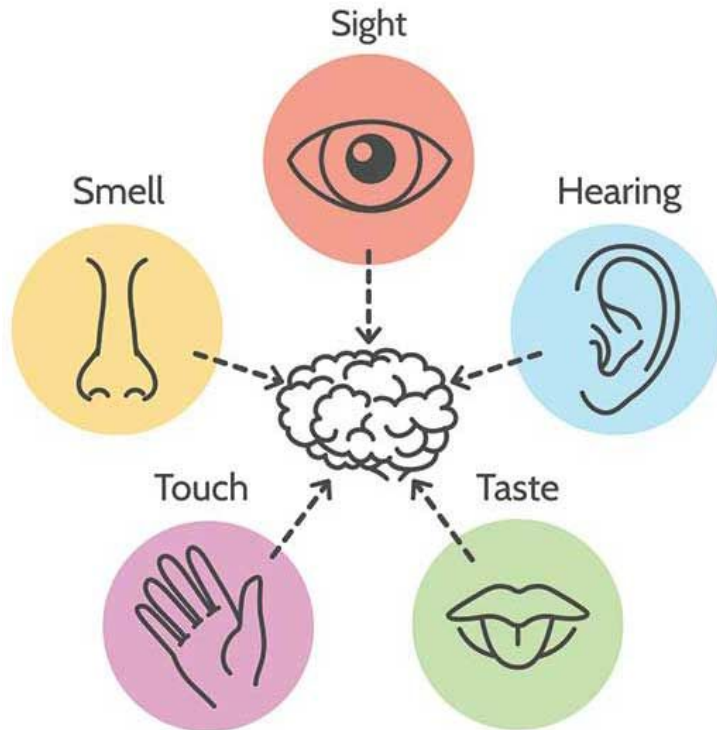


Sensing in XR World

Developing the artificial sense



How do we make senses of the world?



Depth Sensing, Motion tracking



Object detection, Voice recognition



Motion tracking

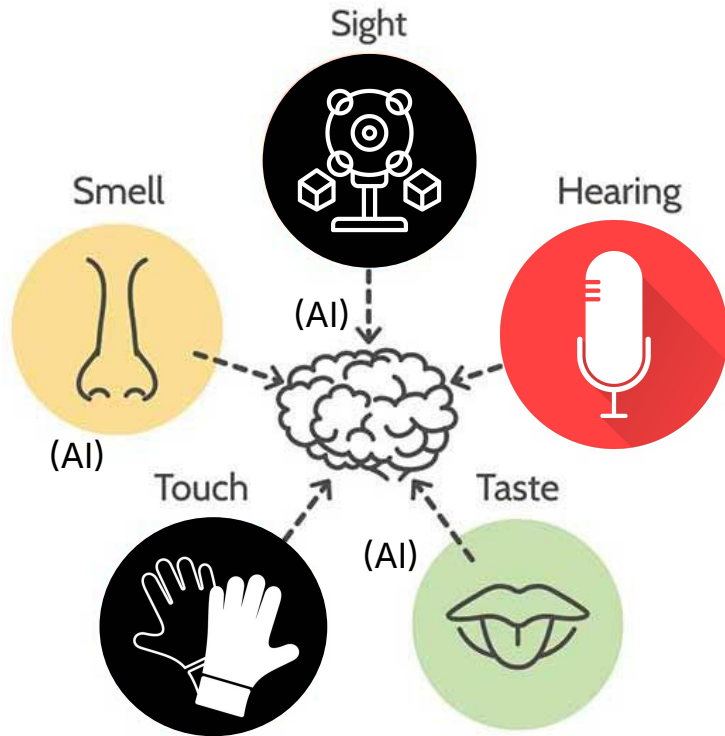


Physical and psychological safety perception



Golden Stripes.

How do we make senses of the XR world?



Depth Sensing, Motion tracking
(Lidar, Image to 3D, NeRF, SLAM ...)



Object detection, Voice Recognition



Motion tracking
(SLAM, Physics Engine)



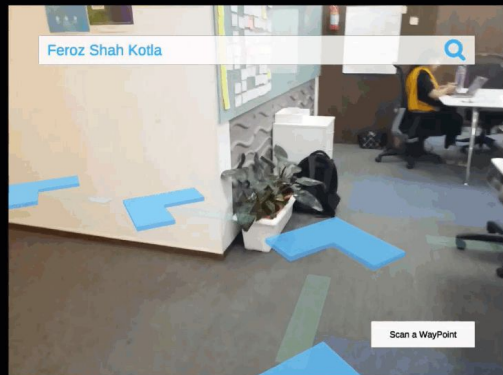
Physical and psychological safety
perception (Sensors, Actuators, BCI - AI)

Space Aware Apps

Spatial Computing

Volumetric Apps

Spatial Anchor, World Coordinates



/thoughtworks



Map and navigation, optimal routing



Indoor, Outdoor, City Scale, beyond experiences. Social hotspot, targeted marketing and more.



Measure, Tracking Area, Volume Estimation, Progress.



Building Equity with Technology

Exploring the Metaverse

Redefining reality in the digital age



Kuldeep Singh



CHAPTER 4 AI Empowering the Metaverse

Introduction

This chapter explores the crucial role of **Artificial Intelligence (AI)** in the metaverse, enabling intelligent and seamless interactions within virtual environments. It covers how AI capabilities contribute to immersive and interactive experiences in the metaverse, encompassing user identification, natural language interactions, visual perception, physical interactions, spatial awareness, audio experiences, and advanced data processing. It also touches up on the research that connects the brain to computers and manipulates dreams and thoughts to bring magic of technology.

Any sufficiently advanced technology is indistinguishable from magic

-- Arthur C. Clarke

Structure

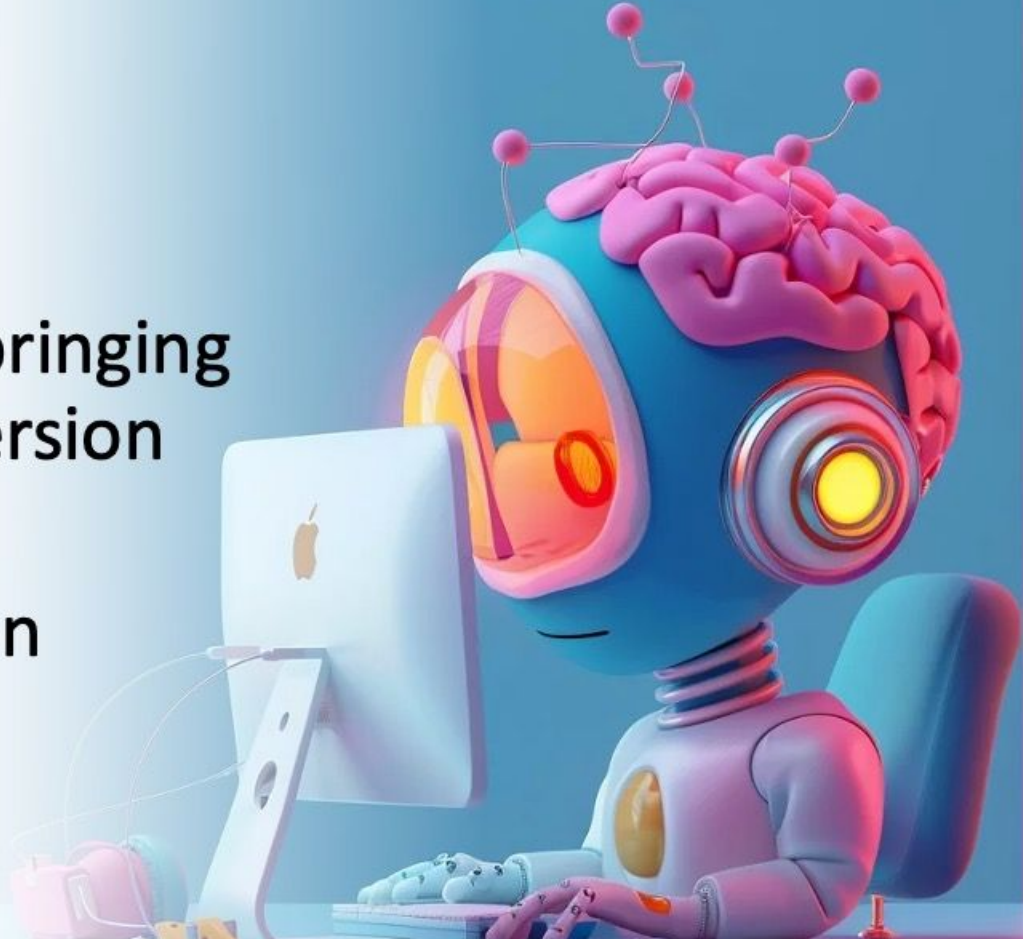
In this chapter, we will discuss the following topics:

- Artificial Intelligence
- Importance of AI
- Evolution in AI
- AI enabling metaverse

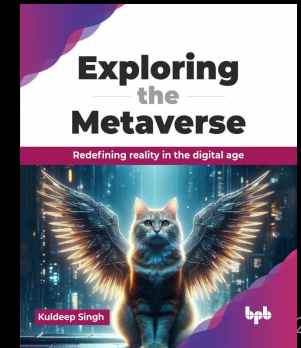
Generative XR

Space aware AI bringing
new era of immersion

XR is becoming an
interface for AI



Communicate with Artificial Sense



Communicate with Artificial Sense



Context	Challenges	Outcome
<ul style="list-style-type: none">• Education• Training• Onboarding• Marketing• Entertainment• Consultation• Customer support• Coaching• Conferences• Get together	<ul style="list-style-type: none">• Language• Location• Culture• Ability / IQ / EQ• Situation• Financial/ Educational Background• Behaviour and Preferences• Age, Sex and Race	<ul style="list-style-type: none">• Personalized Education & Training• Personalised Content and Entertainment• Targeted marketing and influencing• Virtual Communication Agents• Always available services• Trust building by visualising AI• Meet the scale

 Try it in your domain

Work with Artificial Sense



Work with Artificial Sense

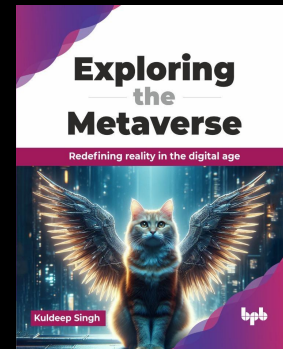


Context	Challenges	Outcome
<ul style="list-style-type: none">• Operational Efficiency• Productivity• Distraction free work• Assistant / Reviews• Safety• Audit and Compliance• Hybrid working• Remote working	<ul style="list-style-type: none">• Aging labour, shortage• Outdated knowledge, and traditional trainings• Working with machines• Mental strength• Fatigue• Cost of monitoring and compliance• Changing work environment	<ul style="list-style-type: none">• Enhanced capability with AI assistant• Remote collaboration• Human machine Integrated working environment• Productivity boost by targeted upskilling• Safety compliance• Pre-trials and simulation to build trust



Try it in your domain

Go Beyond with Artificial Sense



Go Beyond with Artificial Sense



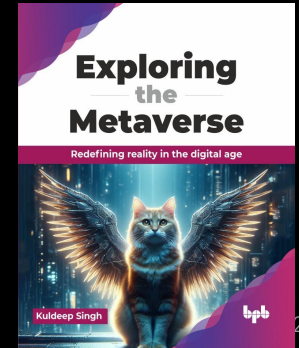
Context
<ul style="list-style-type: none">• Gaming and Entertainment• Creative Art and Culture• Time travel experiences• Virtual Social Life• Health and Fitness• Experience beyond physical limits

Challenges
<ul style="list-style-type: none">• Imagining beyond life and physical ability, and boundary• Tech Awareness and availability• Cost and affordability• Space and resource limitation

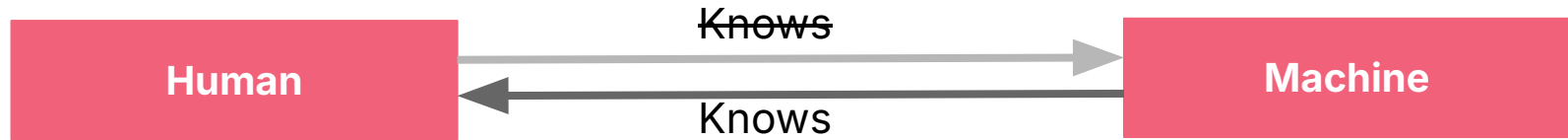
Outcome
<ul style="list-style-type: none">• Virtual Studios and showrooms• XR Enabled Museums, Meet and greet• Enhanced sports and Fitness• Virtual coaching• Experience the imagination• Virtual Drugs and Therapy

 Try it in your domain

Nothing is Free, the Way Forward



Nothing is Free, The Way Forward

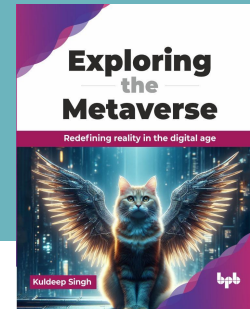


Challenges

- Privacy and Identity Protection
- Dependence
- Social Isolation, Mental issues
- Awareness
- Sustainability - Viability, Bearability, Equitability

The Way Forward

- Collective effort - Academia, Industry, Businesses, Governing body, and people.
- Create awareness, use it wisely.
- Contribute in developing standards and and practices, open ecosystem.



Physical Intelligence

- Think of putting intelligence and connections in
 - Physics,
 - Chemistry
 - Biology
 - Zoology
 - Economy
 - Arts
 - Sports
 - ...
- Opportunities are endless, What You Imagine, What You Get!

Questions?

 **thoughtworks**



Thanks and keep in touch

Kuldeep Singh

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