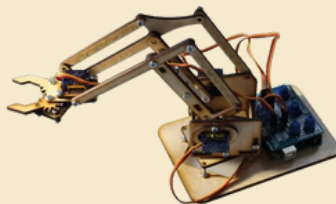
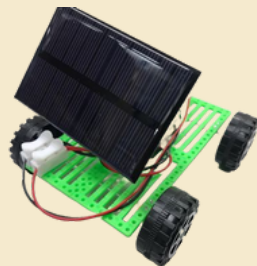




e-Learning Development Laboratory

Department of Electrical and Electronic Engineering
The University of Hong Kong

STEAM Student courses



```
#@title 5. Run
print (source)
Device = "cuda" #@param ["cuda", "cpu"]

Processor = "face_swapper face_enhancer" #@param ["face_swapper face_
VideoEncoder = "libx264" #@param ["libx264", "libx265", "libvpx-vp9"]
VideoQuality = "18" #@param (type:"string")

KeepFPS = True #@param (type:"boolean")
KeepAudio = True #@param (type:"boolean")
KeepFrames = False #@param (type:"boolean")
ManyFaces = True #@param (type:"boolean")

KeepFPS = "keep-fps" if KeepFPS==True else ""
KeepAudio = "skip-audio" if KeepAudio==True else ""
KeepFrames = "keep-frames" if KeepFrames==True else ""
ManyFaces = "many-faces" if ManyFaces==True else ""

$now
$cmd = f"run.py --execution-provider (Device) --source (source) -t (t
$old
cmd = f"run.py --execution-provider (Device) --source (source) -t (ta
print(f"cmd='{cmd}'")
!python $cmd
```

e-Learning Development Laboratory



Platform and Technology Development

- ★ Learning Management System
- ★ Board computer management system
- ★ Electronic textbook platform

Teaching related research

- ★ Electronic teaching effectiveness
- ★ Education big data analysis and mining
- ★ Artificial intelligence and technology education

Electronic teaching content

- ★ Oxford University Press Content Collaboration
- ★ Electronic textbooks EMADS
- ★ STEAM Education and Information Technology

Knowledge exchange

- ★ Partner School Program
- ★ Education Bureau Teacher Professional Training Courses
- ★ Teacher Training, Sharing Meetings, and Open Classes



STE (A) M has been held since 2018 Summer camp, with themes including artificial intelligence, machinery and programming, smart cities, etc

Course Theme

- Introduction and Practice of Artificial Intelligence and Internet of Things
- The Application of Virtual Reality and Metaverse in Emerging Technologies
- Constructing Metaverse Games through Programming and Generative Artificial Intelligence Assistants(Roblox)

Introduction and Practice of Artificial Intelligence and Internet of Things

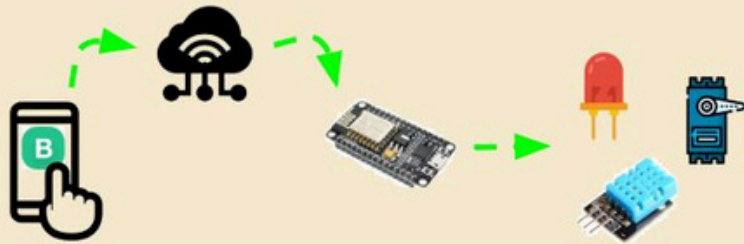
Course hours: 15 hours

Student grade: Form 1 to Form 3



Course Introduction

The course will introduce the concepts of artificial intelligence, machine learning, and the Internet of Things (IoT), and train AI models through practical experience for image, audio, and human pose classification, using online network service tools. Each participant will also receive an IoT experimental kit for practical use. This kit includes a microcomputer motherboard, circuit board, and a mini LCD display screen. Students will learn how to set up a development environment using their own laptop and program a microcomputer motherboard for mobile control through WiFi and network to achieve various IoT applications.



Learning outcomes



1. Understand the principles and applications of artificial intelligence
2. Understand the principles and applications of the Internet of Things
3. Learn programming language C++
4. Practice applying the Internet of Things through programming to operate microcomputer motherboards

The Application of Virtual Reality and Metaverse in Emerging Technologies

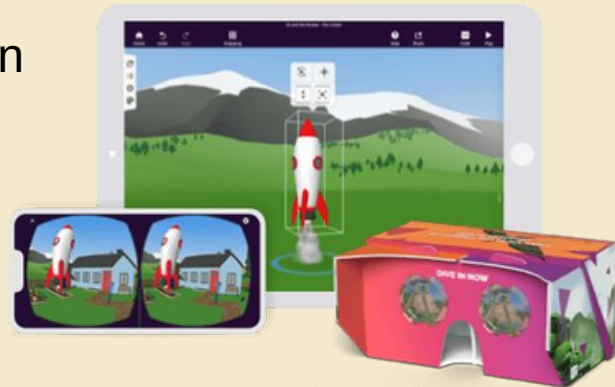
Course hours: 15 hours

Student grade: Form 1 to Form 3

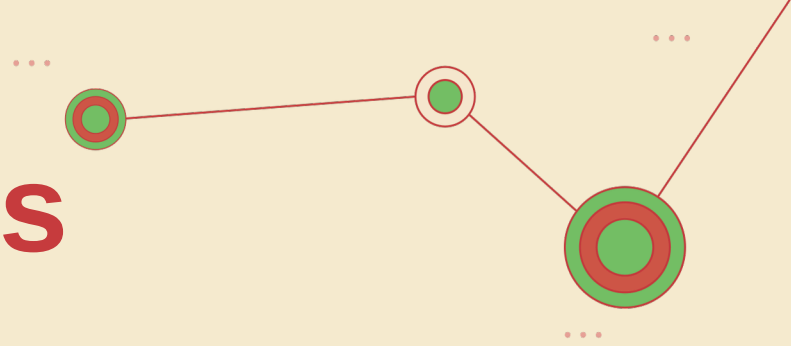


Course Introduction

Students will learn how to use online virtual reality tools such as Cospaces, The Sandbox, and BuildboxDevelop virtual reality and metaverse scenes. Students will learn about the concepts of virtual reality, augmented reality, metaverse, blockchain, and their applications in education, science, and urban planning. Students will learn through practice how to set up development environments, create NFTs, 3D objects, programming logic, game design, and develop virtual 3D scenes.



Learning outcomes



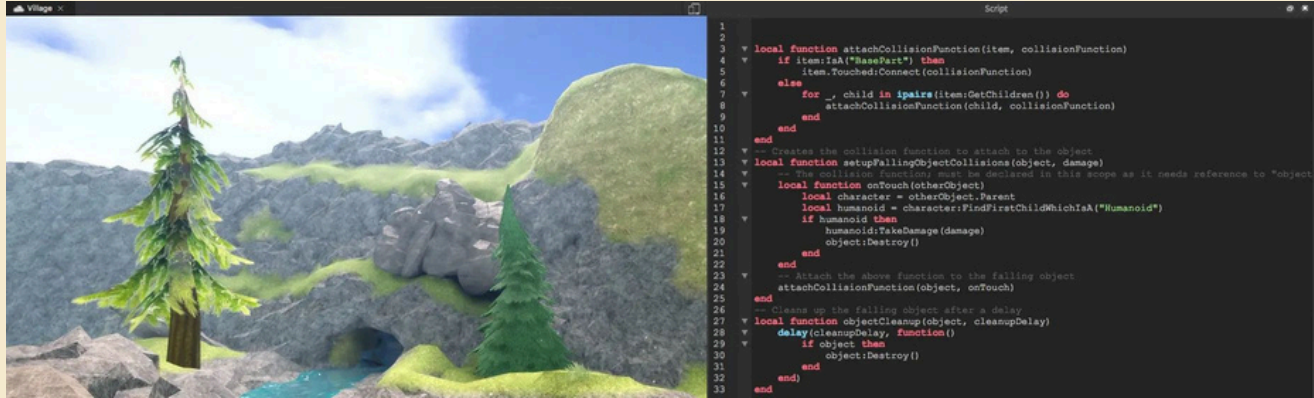
1. Understand the basic principles of virtual reality and augmented reality
2. Understand the principles of metaverse, blockchain, and NFT
3. Understand programming concepts.
4. Learn to create 3D scenes using CoSpaces, The Sandbox, and Buildbox
5. Learn to make NFTs with VoxEdit

Constructing Metaverse Games through Programming and Generative Artificial Intelligence Assistants (Roblox)

Course hours: 15 hours

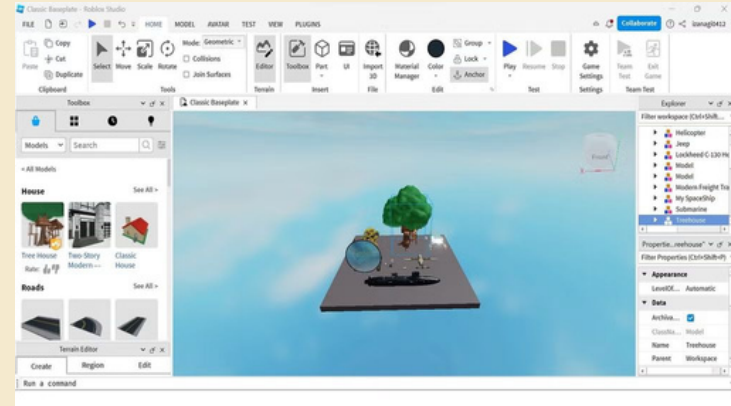
Student grade: Form 1

to Form 3

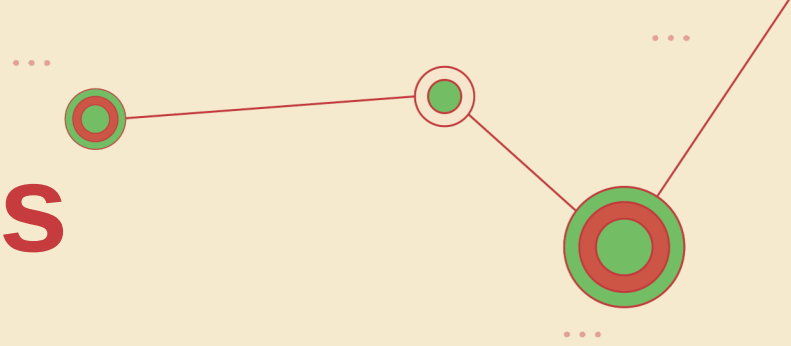


Course Introduction

Students will learn how to use new technologies to create metaverse games, including programming, generative AI, and AI assistants. Students will also learn about the mechanisms of balance in games through studying game theory and learn how to operate online games, as well as analyse the characteristics of some famous games. The course will use the game engine "Roblox Developer" to create one's own metaverse game.



Learning outcomes



1. Understand the new technologies used in electronic games
2. Understanding game design from game theory
3. Understanding the psychological needs of players from a psychological perspective
4. Learn to use AI assistants and generative AI
5. Learn the programming language Lua6. Use the game engine "Roblox Developer"