

# Development of USTH interactive virtual world using Unreal Engine

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October 2, 2019

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## Section 1

### Introduction

# Context

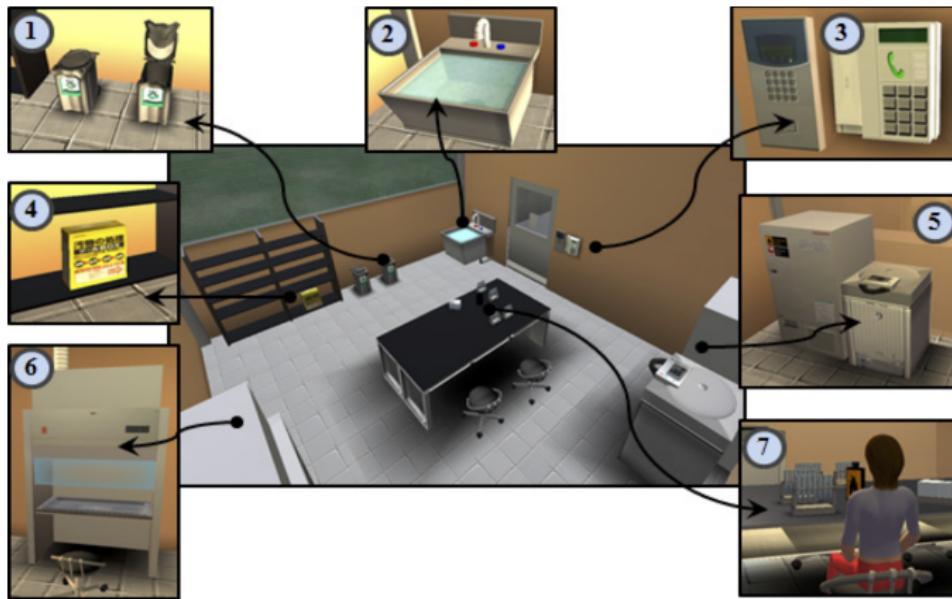


Figure 1: A virtual world based biosafety training application for medical students

# Context

- **Problem:**

- 10 years anniversary of USTH.
- Marketing.
- Virtual trips for remote students or overseas student.

- **Objectives:**

- *Collect* a dataset of 2D images for different views of USTH.
- *Conduct* fully 3D models from collected 2D images.
- *Build* a realtime and interactive 3D virtual world of USTH from constructed 3D models.

## Section 2

### Methodology

# Tools



Figure 2: Sketch and Unreal Engine

- SketchUp.
- Unreal Engine.
- 3DSMax, Substance Painter, Adobe Tools.

# Work flow

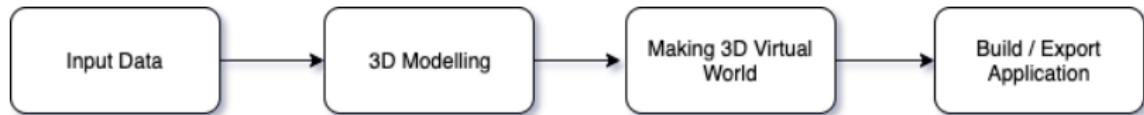
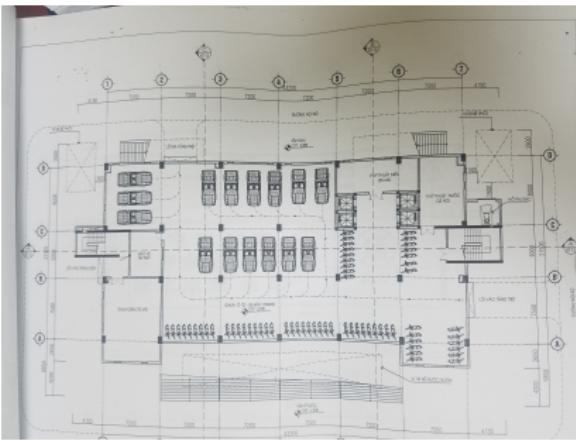


Figure 3: Work Flow Overall Diagram

## Input Data: 2D Images



- 2D panoramic pictures, Floor plans, videos with different views of USTH.

# 3D Modelling

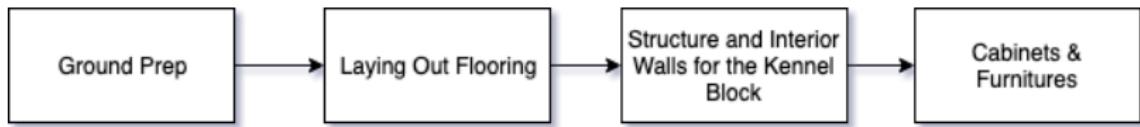


Figure 4: 3D modelling steps

## Section 3

### Results

# Results

## Dataset of 2D images:

- **726 images, 18 videos** with different views of USTH with:  
High resolution, Easily captured, Cheap, Popular.

## Raw 3D models of USTH

- **6 3D models, 300+ different objects and textures.**
- Foundations for other researcher or developer to create others virtual world of USTH.

## Fully interactive virtual world of USTH

Succesfully implement 3 floors ( 7th floor, 4th floors and 1st floor ) to create a virtual world with Unreal Engine.

- Lighting
- Shading
- 30 blueprints.

## Section 4

### Future Plan

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# Future Plan

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# Demo

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# Q&A