# ARSandbox Traffic Simulation Install Guide

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## 1  System Requirements

- Microsoft Kinect V2 Sensor.

- 1080p Webcam.

- A mini short-throw projector.

- Intel Core I7 or equivalent processor.

- 8+ GB RAM.

- GTX 1080 Graphics Card (Other cards may likely work, but are untested).

- An elevated sandbox with approximately 200 lbs. of play sand and an overhead mount for the projector, webcam and Kinect.

## 2  Install Unity

- Go to urlhttps://unity3d.com/get-unity/download and download Unity version 2018.3.12.

- Execute the downloaded installer and follow the instructions given.

    - During installation, ensure that the "Vuforia Augmented Reality Support" option is enabled.

## 3  Install SUMO

- Go to `https://sumo.dlr.de/wiki/Installing#Windows` and download the 64 bit Windows installer.

- Execute the installer and follow the instructions.

    - When prompted, select "C:
    Sumo
    " as the installation location

– Follow the websites instructions to add SUMO to the PATH on your computer and add the environment variable SUMO_HOME. For more information or help please visit the following webpage. `https://sumo.dlr.de/wiki/Basics/Basic_Computer_Skills`

# 4  Clone the repository

- `https://github.com/spencjon/AR-Sandbox-for-OSU-Civil-Construction-Engineering.git`

# 5  Open one of the two scenes in Unity

- For Traffic Simulation mode, open
  src
  AR_Sumobox
  Assets
  Scenes
  SampleScene.unity

- For Depth, Design, and Cut & Fill modes, open
  src
  AR_Sandbox
  Assets
  Scenes
  Sandbox.unity

# 6  Ensure Vuforia is enabled

- Open File ¿ Build Settings

- Select "Player Settings"

- Expand "XR Settings"

- Make sure that "Vuforia Augmented Reality" is checked

- If the checkbox is not available, do the following:

  – Click "Vuforia Augmented Reality" under "XR Support Installers"
  – Run the program that is downloaded and follow the instructions (you will need to close Unity to finish the installation)
  – Reopen the scene in Unity