

GEARS Installation Guide

v 1.0.0

9. September 2017

1 GEARs in Unity 5

1.1 System Requirements

- **Windows 10 OS** (64-bit Version Recommended)
- **Unity Engine** (Version 5.6.1f1 Recommended)
- *Note: Be sure to also have Unity account created and logged in to the engine*
- Virtual Reality Head Mounted Display (only need one)
 1. **HTC Vive**
 2. **Oculus Rift**
 - *Note: Respective runtimes and supporting software for the HMDs are also required*
 - For Interactive Demos: **Leap Motion** attached to front of HMD

1.2 Installation

The default installation only includes two of the four demos available. The two non-default demos are the Interactive Viewer and the Virtual Confocal Microscopy. Although these demos provide considerable insight on the strengths of Unity GEARs in VR, they utilize large object files to represent our data meshes. Therefore their installation steps may take extra time depending on the speed of your computer. If one chooses not to include them in their installation, then the large object files will simply be left in their respective .zip files, and the corresponding scenes will be empty.

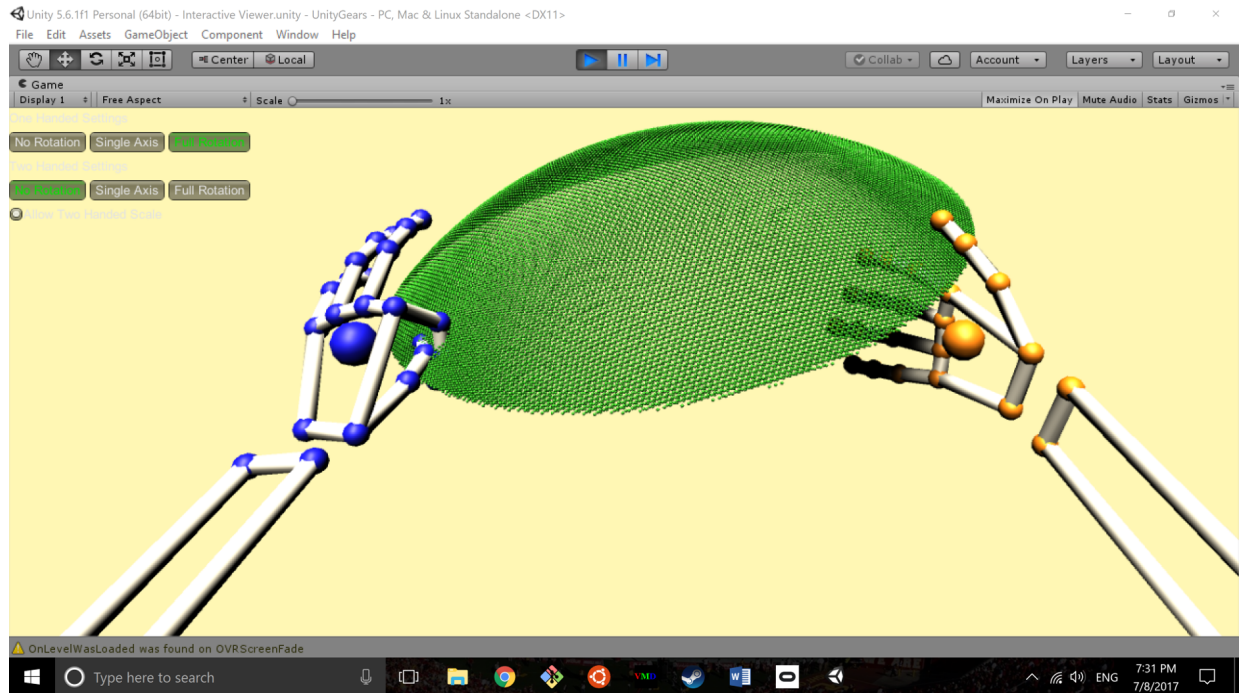


Abbildung 1: UnityGEARS

1.2.1 Setup via Python

Make sure Python 2 is installed on your Windows 10 machine. From the Windows command prompt run:

```
python.exe setup.py
```

If you wish to install the interactive and virtual confocal microscopy demos, include the appropriate flags with the above command like so:

```
python.exe setup.py --interactive --vcm
```

- *Note: This script assumes that your version of Unity is stored at "C:\Program Files\Unity\Editor\Unity.exe"*

1.2.2 Manual Setup

- If you wish to install the interactive and virtual confocal microscopy demos, unzip the following folders:

GEARS\UnityGEARS\Editor\Assets\Demo1-DataViewer\GeometryData.zip
GEARS\UnityGEARS\Editor\Assets\Demo2-VirtualConfocalMicroscopy\GeometryData.zip

- Unzip the following file regardless of whether you choose to install the interactive and confocal microscopy demos:
GEARS\UnityGEARS\Editor\Assets\Leap_Motion_CoreAssets_4.2.1.zip
- Open up Unity.exe and fill out any necessary login credentials.
- Select “Open” to open a new project, and navigate to the GEARs\UnrealGEARS\Editor\ folder and select it. Unity will generate all the necessary project files.

2 GEARS in Unreal Engine 4.16

2.1 System Requirements

- Windows 10
 - Unreal Engine 4.16
 - VR Head Mounted Display (HMD)
1. If using HTC Vive, Steam and SteamVR is required
 2. If using Oculus Rift, Oculus Runtime is required
- Game Controller with Directional Pad
 - Tested Controllers: Xbox 360 Controller, Xbox One Controller, and Oculus Remote
 - Visual Studio Community 2017

2.2 Installation

1. Install the Epic Games Launcher and Unreal Engine 4 from the [Epic Games](#) website. The current project was developed in version 4.16.
2. For VR mode, install one of the HMDs runtimes.
 - [Oculus Rift](#)
 - [HTC Vive](#)
3. Generate Visual Studio files by right clicking the Unreal project file (Lammps-VR.uproject) in the LammpsEditor directory. If your computer does not associate .uproject files with the Unreal Editor, then you may have to open up the .uproject file via the Epic Games Launcher first.