



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
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ASSIGNMENT 2: 3D OBJECT TRACKING USING VUFORIA

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For the assignment of two, we are assigned to create an augmented reality character using Vuforia that is based on 3D object tracking. The character should also respond to our voices by implementing voice recognition in the model. We decided to choose Dancing Animation Free Pack by Kevin Iglesias from Unity Asset Store as our asset for this assignment.

First of all, we used Vuforia to scan and detect the points of our object target as it has provided Vuforia Object Scanner .apk which it needs to be installed into Android devices. After installing the Object Scanner .apk, we both created the targets by scanning our 3D object tracker and also the A4 paper that was provided to place the 3D object to be scanned. The object that was scanned by both of us must be opaque and rigid to obtain the fixed points when scanning. Then, we generated a license key and obtained the .od file by creating a 3D object tracker to the database. Next, the object's database was imported into Unity to place our character from the asset so that it could appear on top of the object scanned using the AR camera.

After displaying the character on the object target, we implemented voice recognition into the model. To achieve this task, we use `UnityEngine.Windows.Speech` namespace in our script in order to allow Unity engine detect voice input from us. We use `KeywordRecognizer` for the speech API. There are two phrases that are used in this assignment which are '*dance*' and '*stop*'. The character will dance when the user commands the character to dance, then the character will stop dancing when the user commands it to stop.

The challenge that we face during finishing this assignment is when the Unity Engine can hardly recognize what we command due to different accents. Therefore, we use a simple command word to ease the engine for recognizing our commands.