# Assignment 1 GDD2 2017:

## Create a 3D Model from an object

Deadline: 07.04.2017

Your task for assignment 1 of GDD2 2017 is to create a 3D model from a real life object using photogrammetry. This should be preferably a statue or a model you find in Inffeldgasse or a landmark of Graz. Photogrammetry [0] is a technique that enables us to create 3D models based on photos of the object (usually a lot of photos).

The used software can be freely chosen, most of the commercial packages feature trial versions which you can use for this task. Here's a list of software we can recommend:

- Agisoft Photoscan (trial available) [1]
- Autodesk ReMake (free version available) [2]
- visualSFM (free) [3]

Since you're supposed to to take photos, a camera will also be needed. Luckily everything ranging from a DSLR to a smartphone camera works pretty well. However, we recommend the use of a DSLR camera. These articles compile a lot of useful advice on how to take great photos for photogrammetry: [4 - 6]

Most of the time photogrammetry creates very dense models, which aren't very performant in a realtime/gaming/vr environment, so it is best practice to optimize the 3D models before using them in games. Depending on which software you decide to use you can either take a look at the built-in optimization tools (if applicable) or use external tools like MeshLab [7] or Blender [8] for optimization.

**Deliverables**: Send a .pdf with the name "1-yourmatrikelnumber.pdf" to gdd@iicm.edu. This PDF should contain 3 screenshots of your 3D model, showing the model from front, top, and side respectively. Additionally it should contain a link to download your model from a cloud storage of your choice (Dropbox, OneDrive, WeTransfer).

**Bonus Task**: It's possible to earn extra points by uploading your 3D model to Sketchfab [9], which is a place to upload and view 3D models in your browser (or VR) without any additional plugins. Tag your model with "tugamedev". If you uploaded the model to Sketchfab then also include the link in the .pdf document.

[0] https://en.wikipedia.org/wiki/Photogrammetry#Photogrammetric_methods
[1] http://www.agisoft.com/
[2] https://remake.autodesk.com/about

[3] http://ccwu.me/vsfm/

[4] http://www.gdcvault.com/play/1023272/Photogrammetry-and-Star-Wars-Battlefront

[5] https://forums.autodesk.com/t5/reality-computing/what-makes-photos-good-for-photogrammetry-how-to-take-the-best/ba-p/5738392

[6] http://www.agisoft.com/pdf/photoscan-pro_1_2_en.pdf

[7] http://www.meshlab.net/

[8] https://www.blender.org/

[9] https://sketchfab.com/