

3D Caricature Generation Tool

Vlasis Gogousis, MA 3D Computer Animation

The creation of caricatures is a particularly interesting field of art, because it is associated with the ability to extract and highlight the very essence of a face. I will be going through all the necessary stages for developing a tool that automatically generates 3D caricatures. From a brief overview on how to obtain three-dimensional models of faces to ways of manipulating 3D meshes, I will be demonstrating the capabilities of scripting on performing useful tasks and producing interesting results. Sample results of caricatures by the developed tool will be on display for discussion.

Key References

Agisoft LLC, 2016. *Agisoft PhotoScan User Manual* [online]. Russia: Agisoft LLC. Available from: http://www.agisoft.com/pdf/photoscan-pro_1_2_en.pdf [Accessed 26 May 2017].

Through Agisoft's manual, I learned everything I needed to know about the basic workflow for reconstructing 3d geometry with their software, and by studying the details on using photographs in photogrammetry I realized the importance of lighting. Before reading on their suggestions for lighting conditions, I had trouble reconstructing the models. As soon as I read into the details on how the software works, I understood what type of lighting conditions should be used.

Autodesk, 2016. *Maya API Introduction* [online]. California: Autodesk. Available from: http://help.autodesk.com/view/MAYAUL/2016/ENU/?guid=files_API_Introduction_htm [Accessed 26 May 2017].

The Maya API introduction was my first step into understanding how Maya interacts with Python and other languages in scripting and programming, and gave me an idea of how plug-ins and extended functionalities for Maya are developed or achieved.

Autodesk, 2009. *MFnMesh Class Reference* [online]. California: Autodesk. Available from: http://download.autodesk.com/us/maya/2009help/API/class_m_fn_mesh.html#ce4c3262a4a86f4743ae95dce51c996b [Accessed 26 May 2017].

While trying to understand how this class works, I got a firm idea of how Maya deals with meshes on a very low level. When using tools like MFnMesh things become quite technical, as you have to deal with pointers and lists of internal Maya representations of objects, but the payoff is significant.

References

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