



Bournemouth University

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PERSONAL INQUIRY

Exploring Retopolgy

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ANNOTATED REFERENCES

Theodore. S., 2016. What is retopology, and how do you do it with ZBrush? [online] Available from: <https://www.quora.com/profile/Steve-Theodore> (Accessed 11th march 2017)

I have been interested in Modelling and how to maintain good levels of detail while creating good useable models. The best way to achieve this is to Retopologies High resolution sculpted geometry or from physically scanned models, but what is retopology and how does it work?

I found that this article explains what retoplogy is and why it is important to follow set constraints and structures. Theordre (2017) explains “Retopologizing is re-building an existing mesh with (more or less) the same volume and shape but with a different mesh layout. Especially when working in a sculpting program like Zbrush, the underlying 'grain' of the mesh matters a lot for the quality of the result: you want the edges in the mesh to flow as much as possible with the contours of the mesh. You also want to control the density of the subdivisions so you have more edges where you need detail or special animation deformations, and fewer edges in simpler areas. Retopology is also a good way to simplify and clean up noisy data, such as 3d scans.

Good topology is also very important for animation, since it will strongly affect the way a model can animate: poorly placed vertices and edges will make life much harder for animators and riggers.”

Foster. S., Halbestein.D.,2014 Integrating 3D Modelling,Photogrammetry and Design [Online] available from <https://books.google.com.om/books?id=wH4pBAAQBAJ&pg=PR4&dq=By+Shau+n+Foster,+David+Halbstein>: (Accessed 24th march 2017)

During my research for this topic I found this book that covers good practice for working with a Retopolgoical work flow.

It could be said that by adopting a similar work flow for adaption in your 3d projects, you too would realizes more predictable results and a greater understanding of the key theories related to this practice.

Foster (2014) says that software that primarily used in film and video games generally use modelling techniques to generate 3d meshes. He goes on to say that topology comprises of connected forms that describes the surface of the object.Retopogizing is the process of optimizing 3d mesh geometry by rebuilding it.

ANNOTATED REFERENCES

Takayama.S., 2015. Data –Driven Interactive Quadrangulation [online] Available from:<https://www.youtube.com/watch?v=GyOwwNvHA1w>.Accessed (20th march 2017)

During my research I explored briefly, alternative methods of retopolgizing geometry and how these methods and algorithms could shape the software we use in the future and the. The study that most interested me was a study presented at SIGGRAPH.

In brief this study looked at how stored Data within a mesh can be used in an interactive way by the user to drive the shape and edge flow of the model.

Takayama(2015) explains “We propose an interactive quadrangulation method based on a large collection of patterns that are learned from models manually designed by artists. The patterns are distilled into compact quadrangulation rules and stored in a database. At run-time, the user draws strokes to define patches and desired edge flows, and the system queries the database to extract fitting patterns to tessellate the sketches' interiors. The quadrangulation patterns are general and can be applied to tessellate large regions while controlling the positions of the singularities and the edge flow. We demonstrate the effectiveness of our algorithm through a series of live retopology sessions and an informal user study with three professional artists.