

# Virtual Reality: You're Halfway There

Thomas Closs

Senior Solution Architect

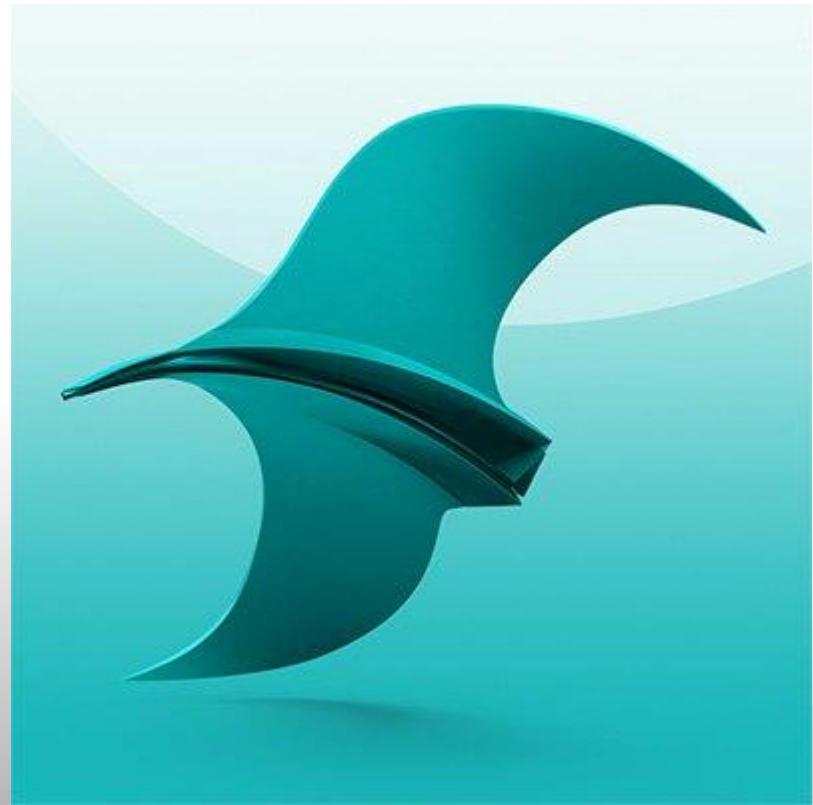
Join the conversation #AU2017

 AUTODESK  
UNIVERSITY

# Introduction

- Tom Closs
  - Jack of all trades, master of none.
  - Though oftentimes better than master of one.
  - Programmer, Designer, Maker, Gamer, Software Ninja
- Senior Solution Architect Autodesk  
[thomas.closs@autodesk.com](mailto:thomas.closs@autodesk.com)





# Learning Objectives

- Understand how to get any CAD model into virtual reality
- Understand the basics of 3D mesh
- Understand when to clean up a model for virtual reality
- Learn how to clean up a model for virtual reality

# What is IN

- Good and bad examples of VR models.
- Examples of importing models from a few different CAD systems.
- Examples of making models better for Virtual Reality (VR).
- High level discussions about using existing 3D data.



# What is OUT

- Detailed Instructions on modeling.
- Developing interactions in VR.
- Rendering and lighting in VR.



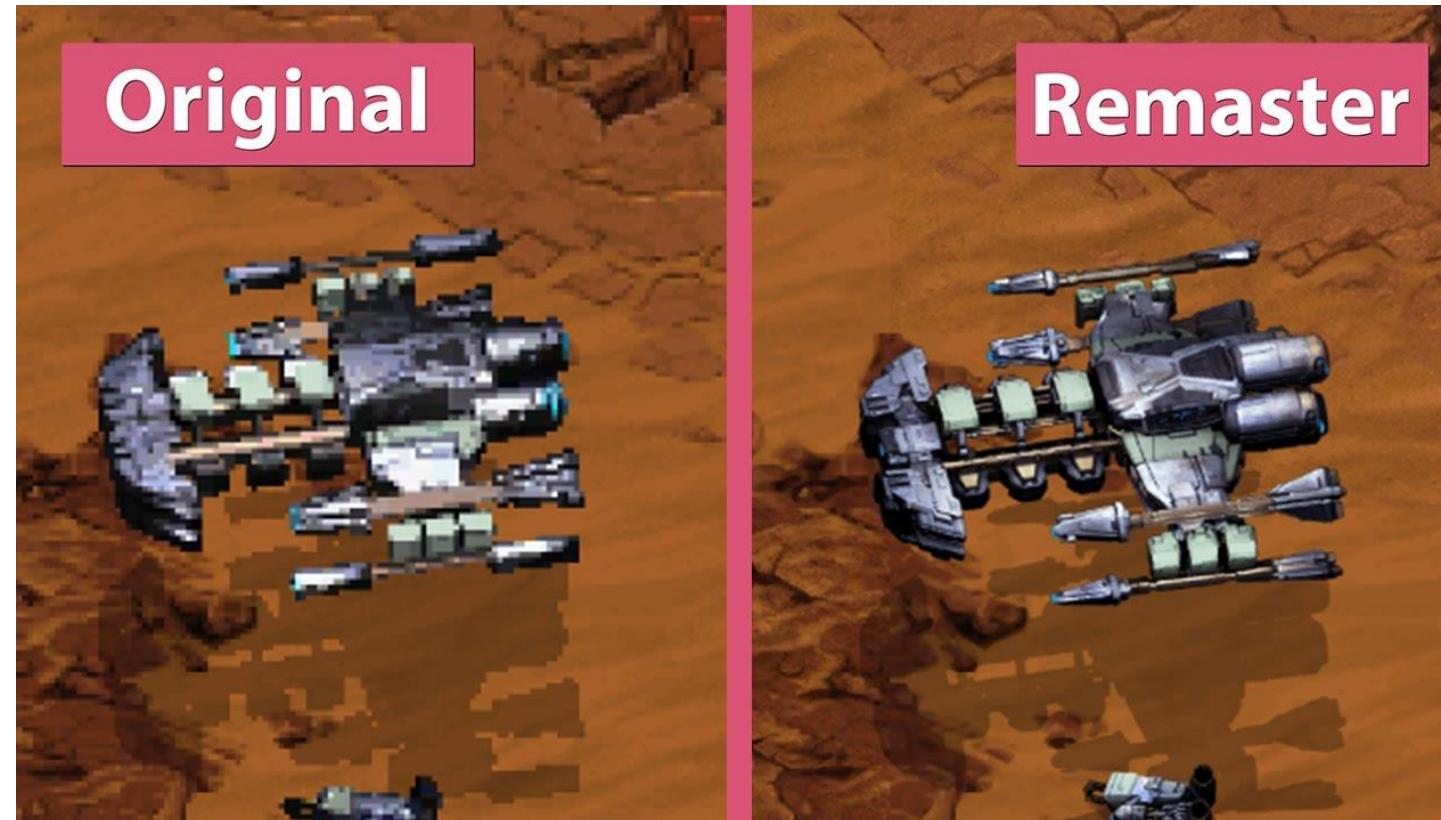
# Virtual Reality Basics

# Why Now?

- Accessibility to hardware
- Expectations
- Public Opinion
- Large Investments
- \$182,000,000,000 Market by 2025



# Same Challenges - New Industries

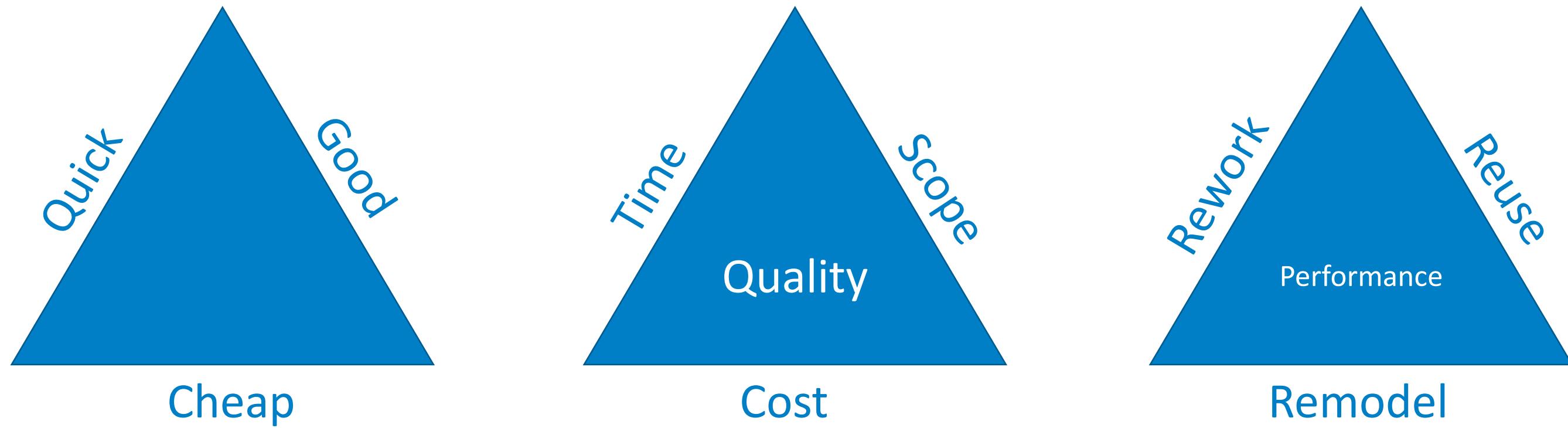


Blizzard Entertainment, StarCraft



Pixar, Monsters Inc.

# The Project Triangle



# Virtual Reality, What to do with it?

- Training
- Safety
- Marketing and Sales
- Research
- Prototyping
- Controller
- Early Customer Feedback



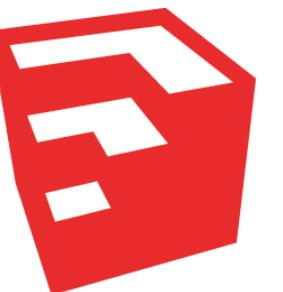
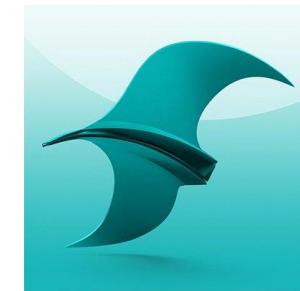
# Working with CAD Models

# The Target File Format

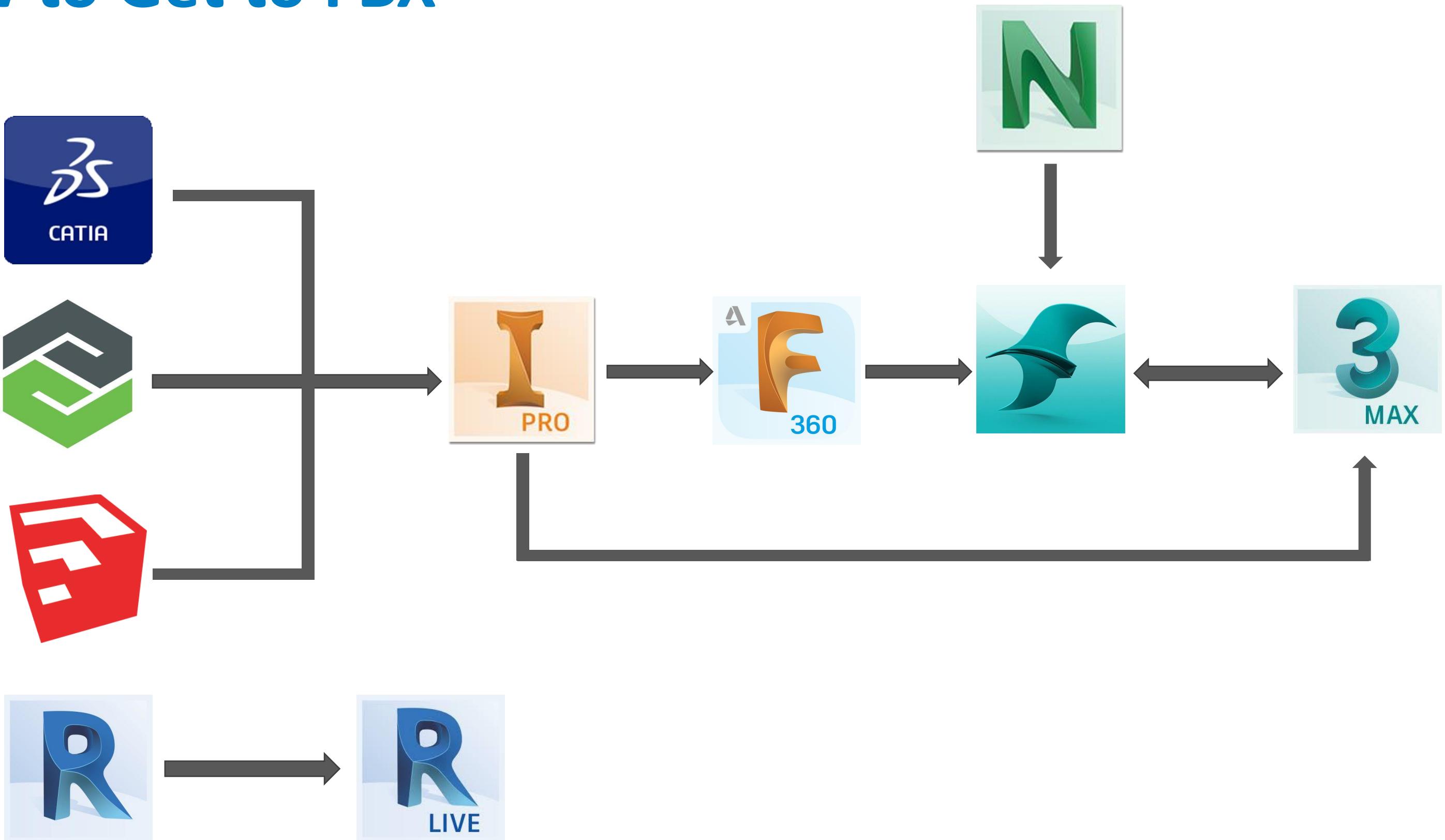
- Supported by Game / VR Engines
  - Unity
  - Unreal
  - Stingray
- Supported by 3D modelers
  - 3DS Max
  - Maya
  - Blender



# How to Get to FBX



# How to Get to FBX

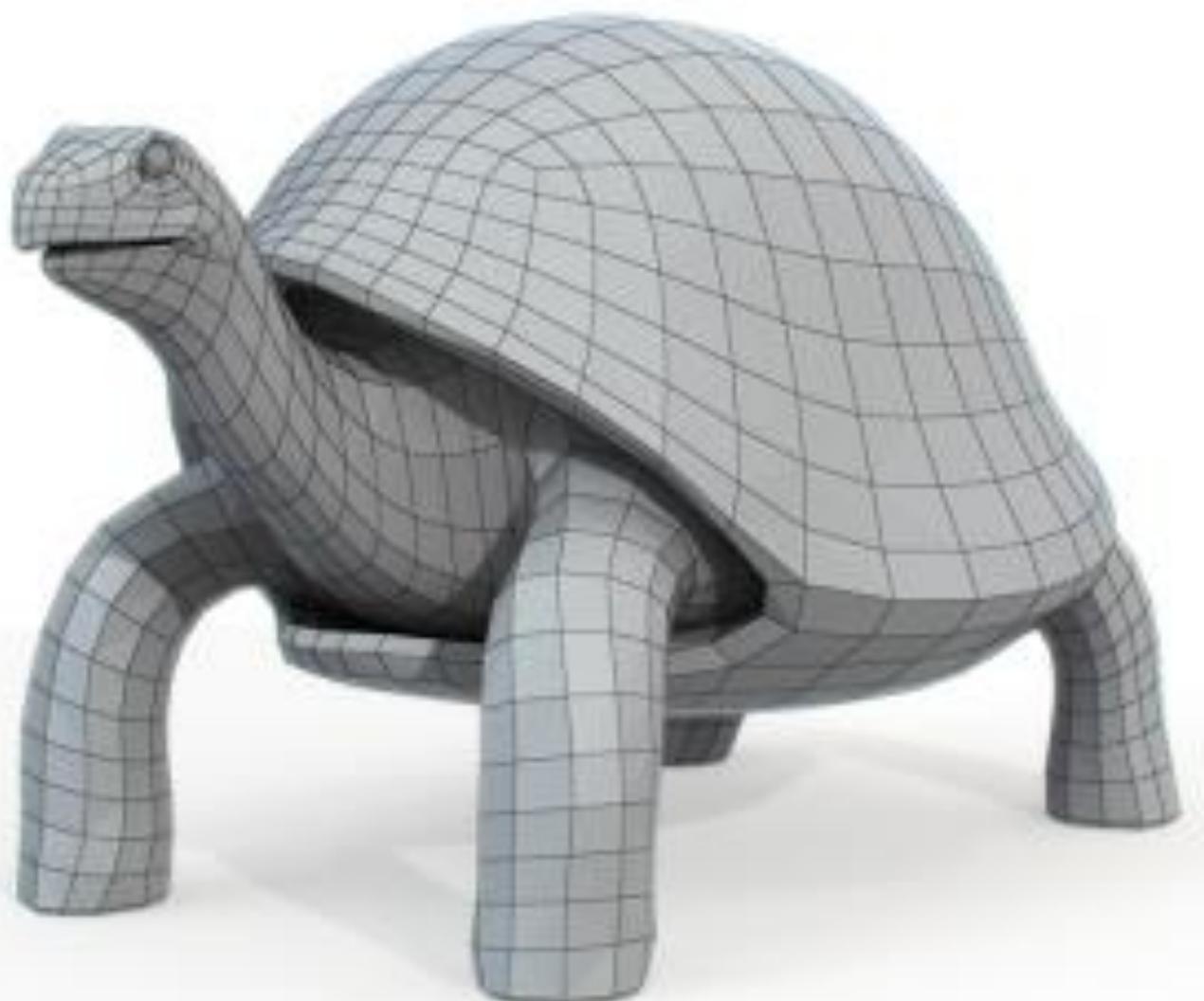


# Demo

# Anatomy of a Mesh

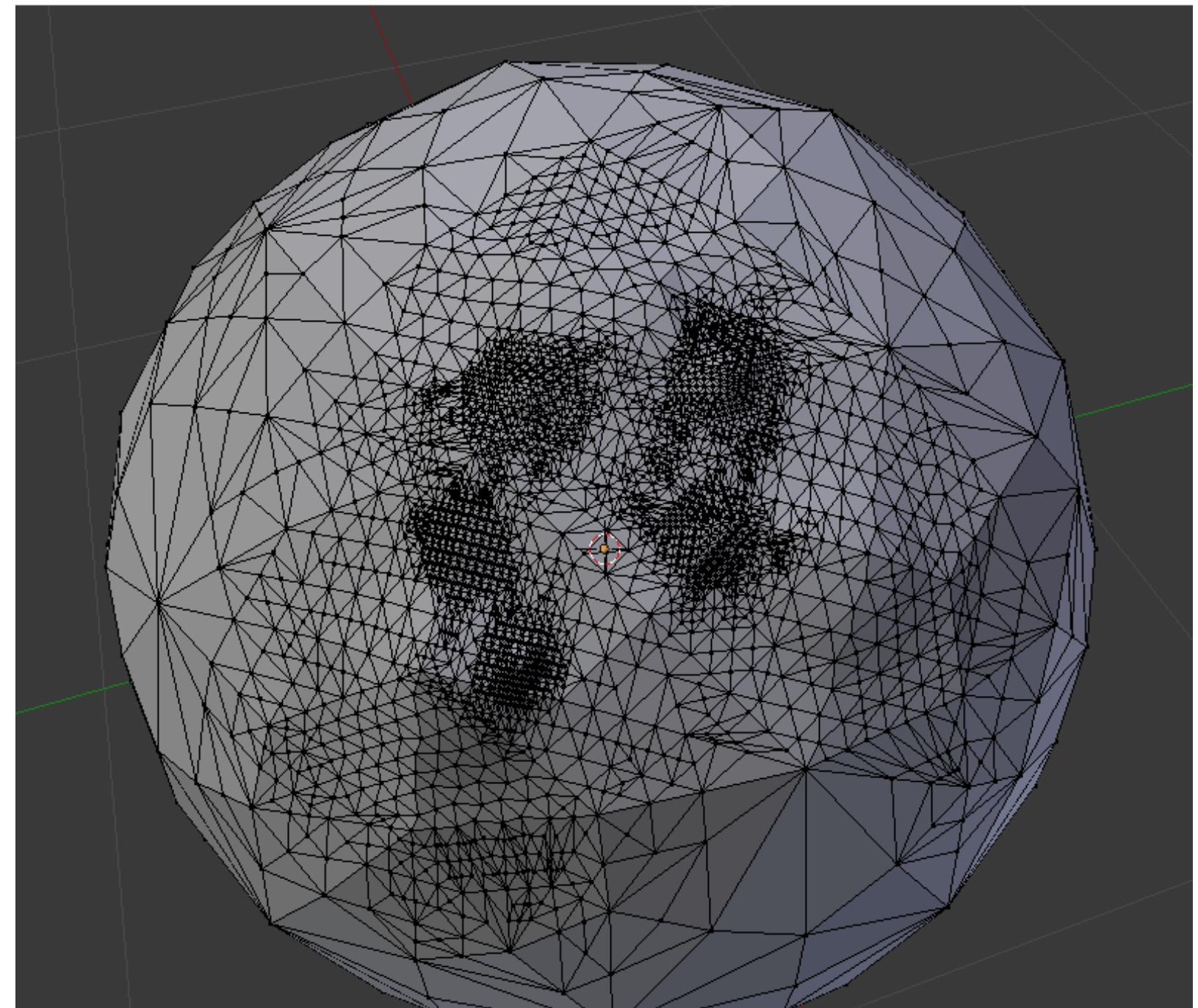
# Defining a Mesh

- Vertices
- Edges
- Faces
- Normals
- Textures



# Using a Mesh

- Complexity
- Resolution
- Quads vs Triangles
- Textures
- Asset Swapping

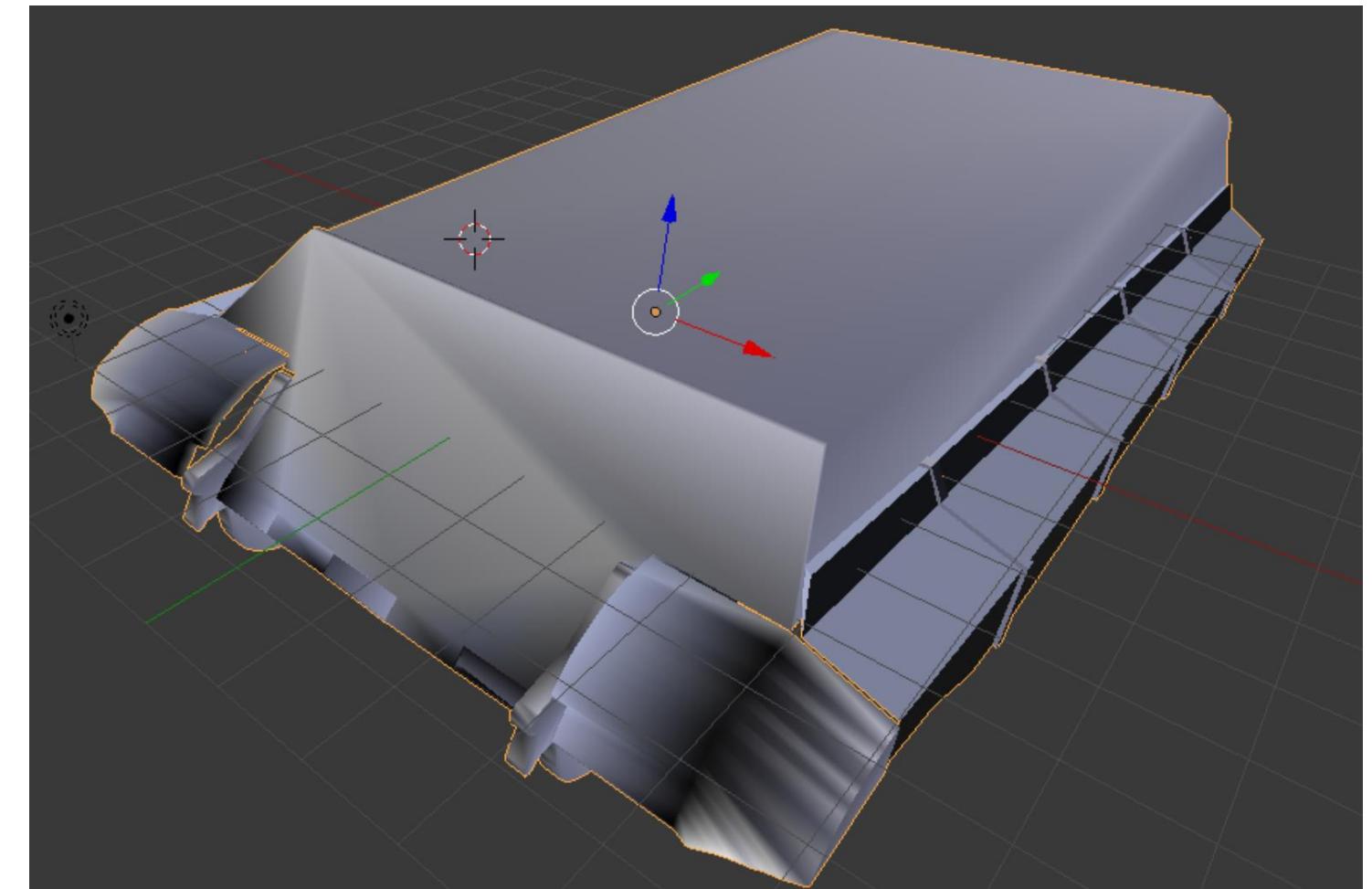


# Demo

# Mesh Problems

# Common Mesh Problems

- Surface Holes / Missing Surfaces
- Floating Surfaces
- Twisted Surfaces
- Complexity
- Incorrect Normals
- Know your Hardware



# Demo

# Cleaning Up a Mesh

# What to Use



# Demo

# Questions

Please keep all questions to topics not covered in Anorak's Almanac.





AUTODESK®

Make anything.

Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2017 Autodesk. All rights reserved.

