



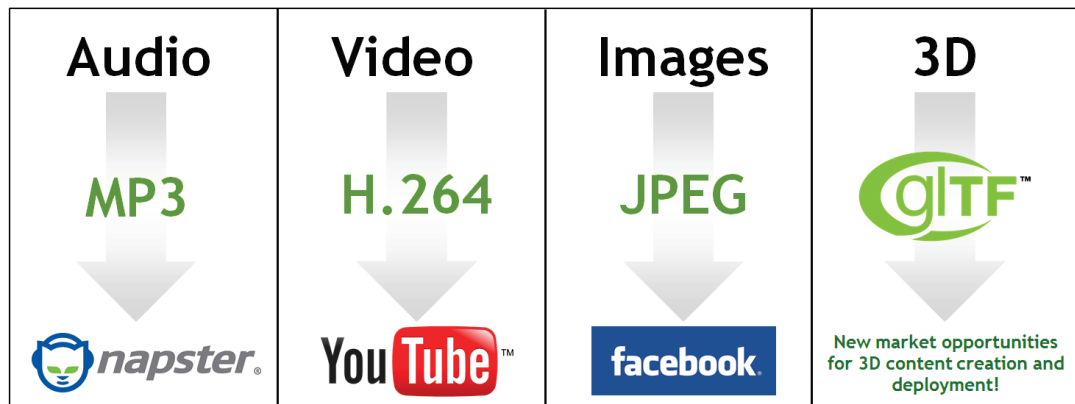
K H R O N O STM
G R O U P

Ecosystem Update

Neil Trevett


GTC, March 2018

glTF - Cross-Platform 3D Asset Transmission



All glTF spec development on open GitHub:
<https://github.com/KhronosGroup/glTF>



- 
- Compact to Transmit ✓
 - Fast to Load ✓
 - Describes Full Scenes ✓
 - Runtime Neutral ✓
 - Open and Extensible ✓

OpenGL Transmission Format
 Efficient transmission of 3D scenes and assets



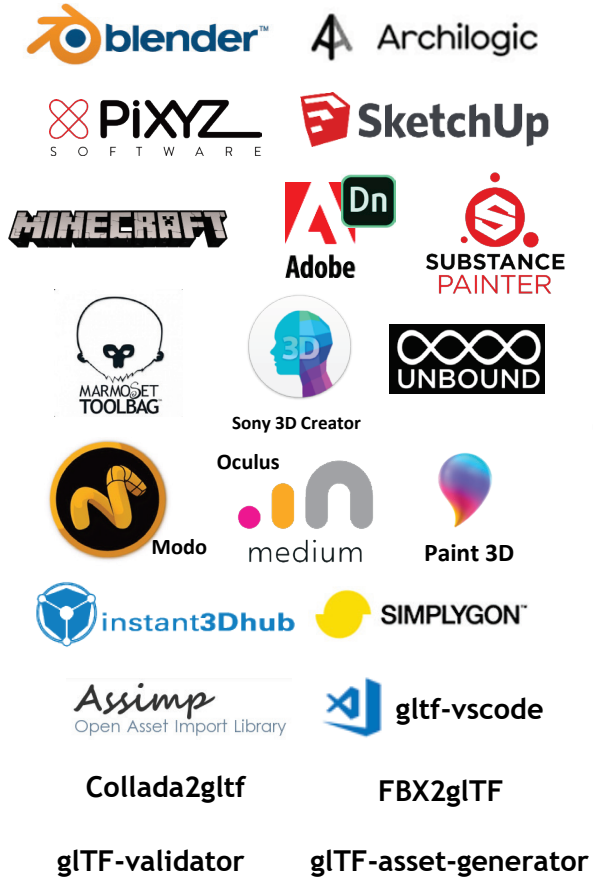
glTF 1.0 - Primarily for WebGL
 Uses GLSL for materials
 Released December 2015



glTF 2.0 - Physically Based Rendering!
 Metallic-Roughness and Specular-Glossiness Materials
 Rendering API independence
 Released June 2017

glTF Momentum

Creation Tools



3D Content



Discover

Apps and Engines



Create



Experience

Drive Demand

Users



glTF Highlights at GDC

- Facebook now supports glTF - drag and drop models to your feed
 - Driving exporter/tool demand: FBX2glTF, Modo, ...
- Sketchfab has over 150K glTF models
 - Under Creative Commons license
- Adobe Dimension is adopting glTF
 - glTF publishing service for interactive marketing materials
- Unity helping open source glTF importer/exporter
 - Plans to have a Unity package before the end of year
- Unreal 4.19 has experimental glTF import
- Focus on ecosystem robustness
 - [gltf-vscode](#) & [glTF-Validator](#)
 - [glTF-Asset-Generator](#)
 - [glTF-Sample-Models](#)
- Vibrant open-source community
- Not just for the web



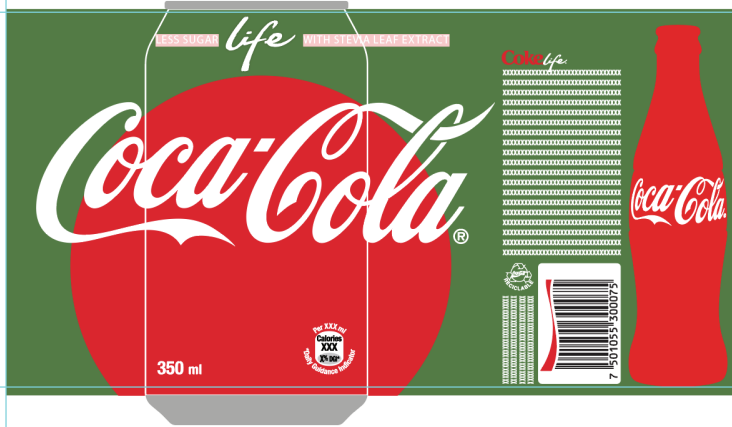
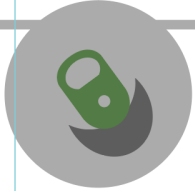


Adobe Dimension & glTF

GDC 2018

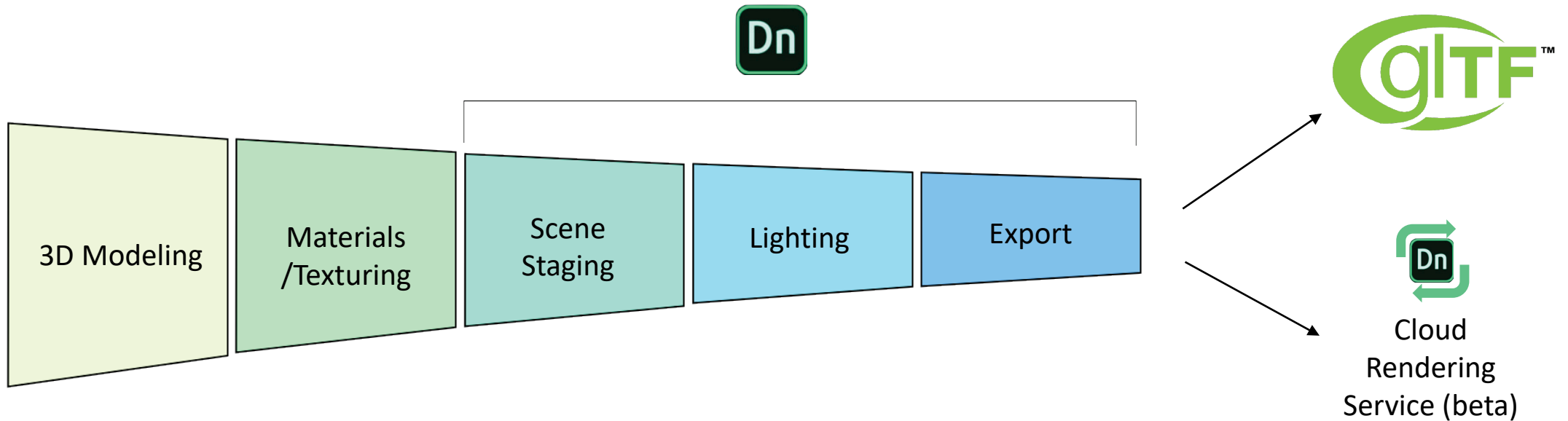
**MAKE IT AN
EXPERIENCE**

STEP 1: RISING DISK



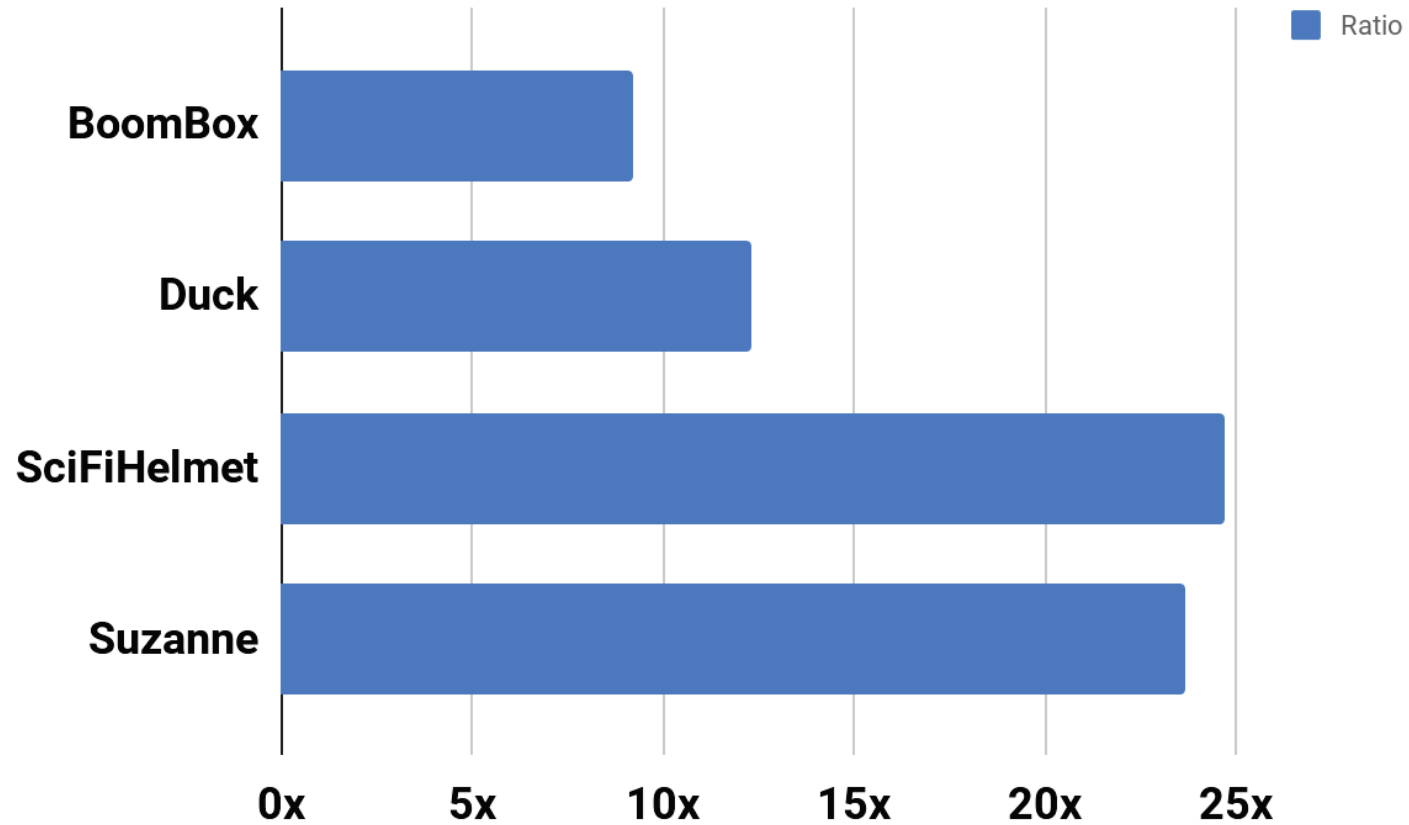
Services for Adobe's 3D Ecosystem

Cloud first solutions that meet customer demands



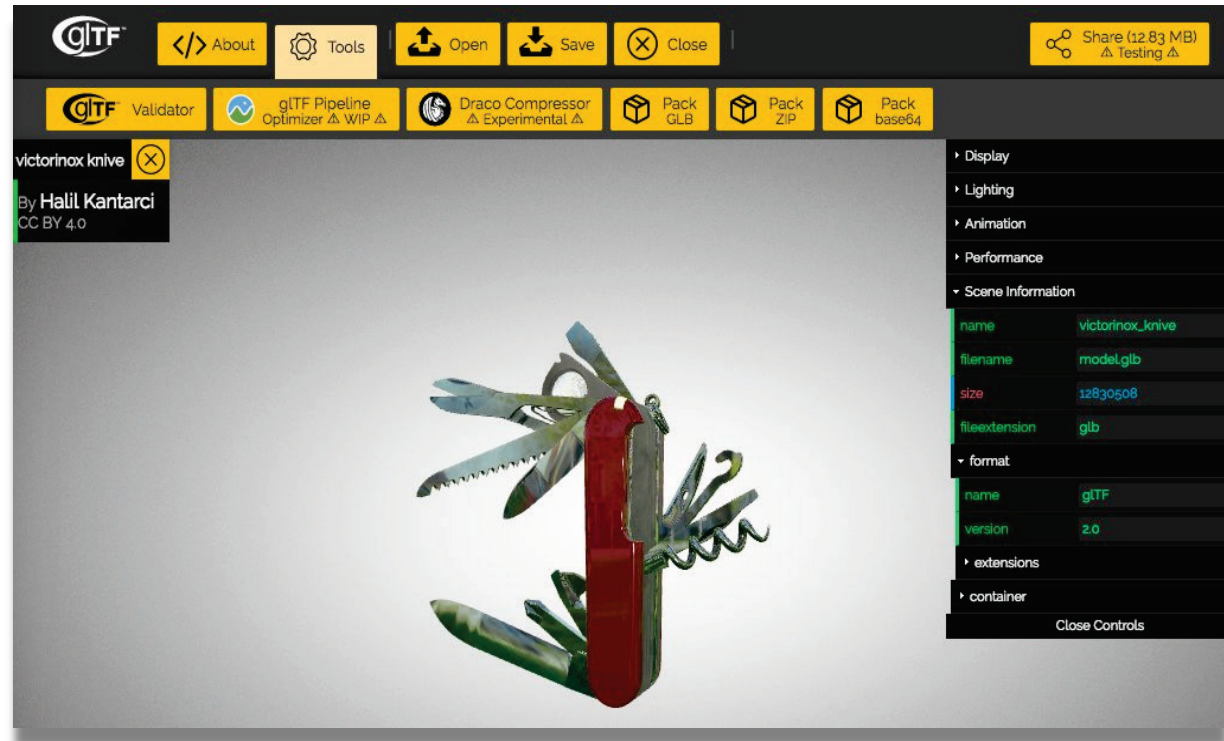
Draco 3D Compression Extension to glTF 2.0

Mesh Compression Ratio



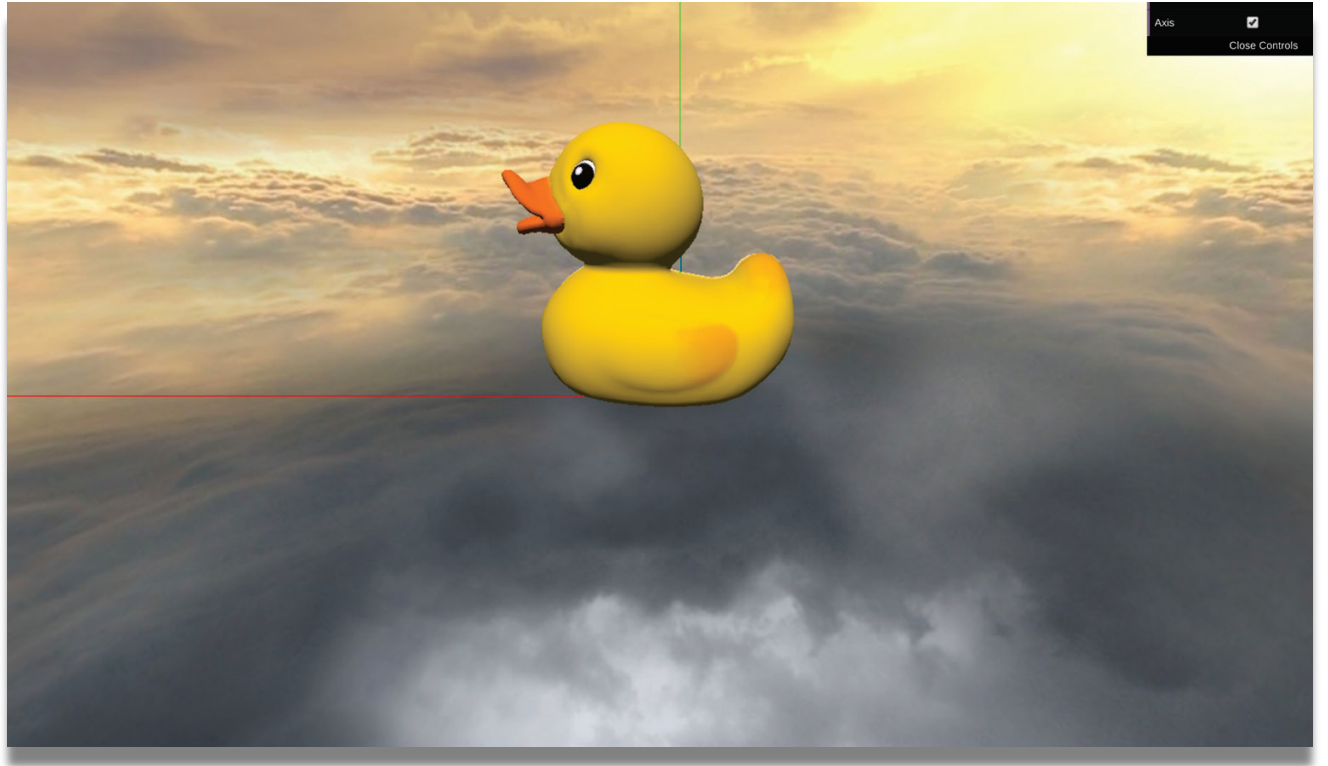
Creating Draco Compressed glTF

- AMD Compressonator
- FBX2glTF
- glTF pipeline
- Insimo



Rendering Draco Compressed glTF

- Three.js
- Babylon.js
- PlayCanvas
- Cesium
- UX3D Engine
- Hilo3D



Upcoming Work

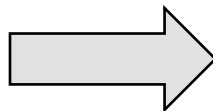
- Animation
- Point clouds
- Better Compression

Accessing Draco

- https://github.com/google/draco/tree/gltf_2.0_draco_extension
- C++ encoder and decoder
- JavaScript and WebAssembly decoders

glTF in Unreal Engine

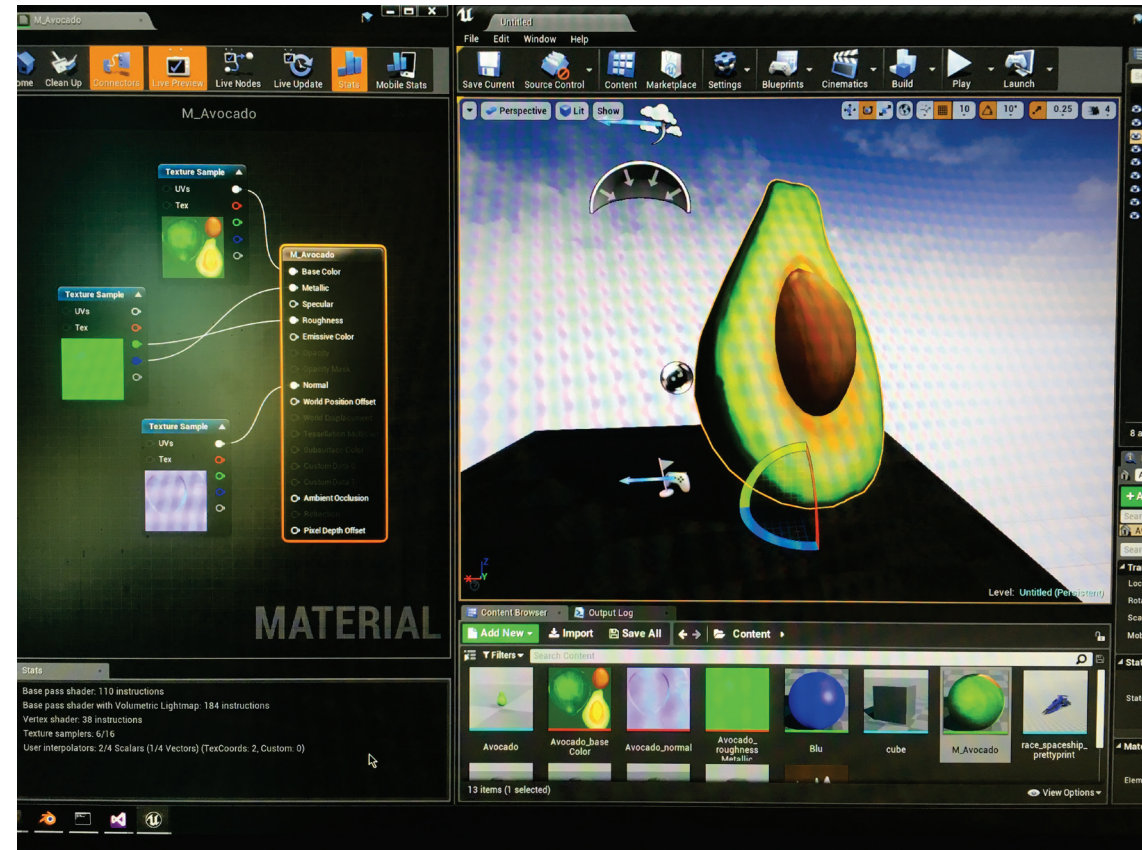
- Static Meshes, Materials, Textures
- "Experimental" in UE 4.19 – Try it now!
- Help us prioritize features of the *next* release



**UNREAL
ENGINE**

Materials

- **Metal + Roughness PBR**
 - Closest to Unreal Mats
 - Normal Maps
 - Transparency
 - Emissive
 - Occlusion
-
- Editable Node Graph
 - Can have multiple per Mesh
 - Can keep material slots & swap in full Unreal materials





Why use glTF when making games?

Isn't glTF a *web thing*?

More like the PNG of 3D

- Predictable import / export saves artists time
 - Not sideways
 - Not 100x too small / too large
- Material model is rich enough for most uses
- Open format!
 - Public spec
 - Sample models
 - Validator
 - *Anyone* can implement

glTF@Microsoft



Products



Mixed Reality Portal



Paint 3D



Remix 3D



Microsoft Photos



Mixed Reality Viewer



3D Builder

Open Source Contributions



[3ds Max exporter plugin](#)

[Maya exporter plugin](#)



[gltf-vscode](#)



[UnityGLTF](#)

[glTF-WebGL-PBR](#)

[glTF-Sample-Models](#)

[glTF-Asset-Generator](#)

[glTF-Toolkit](#)

[Microsoft.glTF.CPP](#)

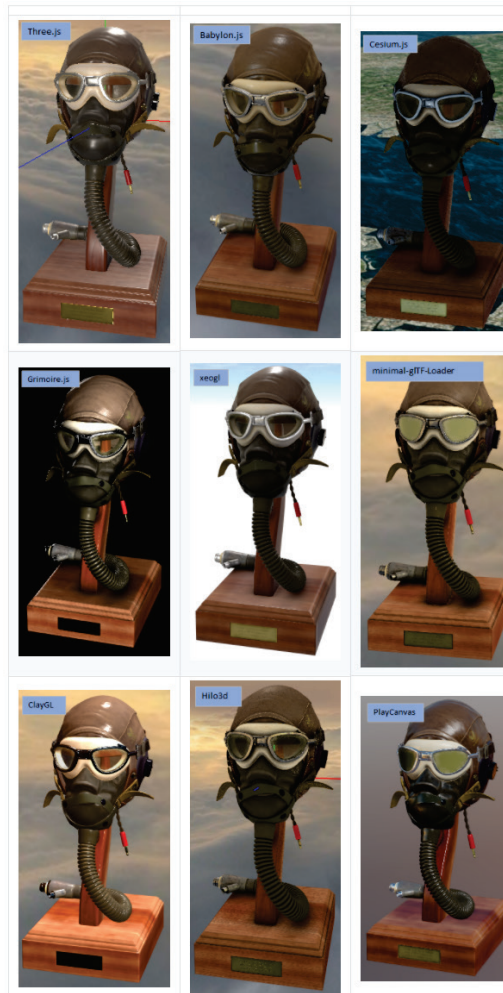
[Microsoft.glTF.macOS.CPP](#)

[glTF-Shell-Extensions](#)

[makeglb](#)



Consistent Rendering Across Multiple Engines



<https://github.com/ChronosGroup/gLTF-Sample-Models/pull/154>

glTF Roadmap Discussions

- Careful balance: building ecosystem vs. moving the spec forward
 - Draco filled a key missing component for mesh compression -what is next?
- Texture Transmission Extension
 - Optimized transmission format with efficient local expansion to any GPU format
- Submitted to Ratification
 - Unlit ([#1163](#))
- Last call for feedback
 - Lights ([#1223](#))
 - Texture Transforms ([#1015](#))



glTF 2.0 PBR Rendering - Image courtesy instant3Dhub / instantUV - Max

Industry Calls to Action

- **Adopt glTF in your runtime and content pipeline - don't be left out!**
 - But - keep the ecosystem robust: use validation tools and provide spec feedback
- **Join the spec and extension discussions on GitHub!**
 - <https://github.com/KhronosGroup/glTF/issues/456>
- **Contribute to the open-source ecosystem and let us help you spread the word!**
 - Tutorials, sample models, answering questions, etc.
- **Share your roadmap priorities with us!**
 - <https://github.com/KhronosGroup/glTF/issues/1051>
- **Join Khronos!**
 - Get directly involved in the glTF Working Group



Sketchfab User: theblueturtle

<https://sketchfab.com/models/b81008d513954189a063ff901f7abfe4>