RYAN SIMPSON

Senior CG Generalist · Hard-Surface Assets, Real-Time PBR & Pipeline Tools

Raleigh–Durham, NC m3trik@outlook.com linkedin.com/in/m3trik github.com/m3trik artstation.com/m3trik

PROFILE

Senior computer graphics generalist with a mechanical, hard-surface core. I model, texture, rig, and animate real-time PBR assets for Unity VR training in aircraft maintenance, and I have produced photoreal product renders from CAD. From the start I have worn a second hat in pipeline tools: for more than ten years I have written and maintained the Python toolkit that takes my production work from modeling to validated FBX, glTF, and USD delivery.

EXPERIENCE

Senior 3D Artist, VR Training

2020 – Present

Moth+Flame · New York, NY (remote)

- Model and texture real-time hard-surface assets for Unity VR aircraft maintenance training, working from technical orders, photo and video reference, and photogrammetry.
- Rig and animate mechanical assemblies and maintenance procedures for interactive training.
- Build photogrammetry assets from photo and video capture.
- Design pipeline solutions for production work and maintain them in my open-source toolkit (below).

CGI Artist, Product Rendering

Jun 2018 – Feb 2019

Indigo Studios · Atlanta, GA

- Converted product CAD files into clean, render-ready models for 3ds Max.
- Produced photoreal product imagery in 3ds Max and V-Ray: scene setup, backplates, lighting, and materials.
- Rendered vector line art for user manuals and quick-start guides.

Service Technician

2008 – 2017

Caliber Motorcars · Atlanta, GA

- Diagnosed mechanical and electrical faults with OBD-II and CAN bus diagnostic software; every day brought a different problem to solve.
- Years of hands-on teardown and rebuild: the mechanical understanding and interest behind my hard-surface modeling and rigging.

SKILLS

3D & Real-Time
Maya, Blender, ZBrush, 3ds Max, Unity, Unreal Engine

Texturing & Baking
Substance 3D Painter, Substance 3D Designer, Marmoset Toolbag, RizomUV, Photoshop

Rendering
Arnold, V-Ray, lightmap baking, three.js, WebXR

Capture
Metashape, RealityScan, Gaussian splatting

Code
Python, PySide6/Qt, MEL, C#, MaxScript, ZScript, PowerShell, Bash

Engineering
Git, GitHub Actions, pytest, Docker, Linux

Generative AI
ComfyUI (self-hosted), MCP agent tooling

EDUCATION

Atlanta College of Art
Computer Animation

Savannah College of Art and Design
Graphic Design

ALSO

Mechanics, 3D printing, audio production, video editing, and traditional art.

OPEN-SOURCE PIPELINE TOOLKIT

Author & Maintainer

10+ years

github.com/m3trik · Python, PySide6, C#

A layered ecosystem, now in its current generation: a host-agnostic core, a Qt UI library, Maya and Blender APIs, a marking-menu launcher, and standalone apps, released to PyPI through CI.

- **Scene Exporter:** one-click export runs 20+ pre-flight checks (naming, duplicate and default materials, texture sizes, transforms, frame rate, hidden geometry, and objects below the floor) and compares the hierarchy with the last shipped FBX, so references downstream don't break. Every GLB passes the Khronos glTF Validator.
- **Shot Manifest:** builds a scene's animation shots from a production spreadsheet, one step per row, checks the scene against the sheet, and exports status tables (CSV, JSON, or Markdown) for review; local edits layer over the sheet without changing it.
- **Shot Sequencer:** ripple-edits shots on the timeline (insert, split, merge, slide, resize, and respace) while their keys and audio follow; each shot's metadata ships with the export.
- **Scene health:** audits score real-time readiness across meshes, materials, and textures; an auto-instancer turns identical meshes into instances; batch renaming and texture-path repair keep scenes clean; headless decimation, remeshing, and deviation measurement (PyMeshLab) check optimized meshes against their source.
- **Round trips:** Substance 3D Painter texturing and bakes, Marmoset Toolbag bakes, headless RizomUV unwrapping, and hand-offs between Maya, Blender, and Unity, with no manual export and import.
- **Mechanical rigging:** builders for wheels, telescoping struts, tubes and hoses, and articulated props on hinge, swivel, ball, and slide joints.
- **Animation tools:** smart baking, a key stash that parks alternate keys outside the working animation, and playblast export.
- **Lighting and review:** Arnold lightmap baking for real-time scenes, and a three.js WebXR viewer that previews scenes live in a browser or headset, so reviewers need no DCC.
- **Capture:** Metashape, RealityScan, and Gaussian-splat photogrammetry pipelines, run from one panel.
- **One toolset, two DCCs:** 50 tools behind one marking-menu launcher, with the same panels in Maya and Blender.
- **Built to share:** installable from PyPI, with test-first bug fixes, GitHub Actions CI, and scripted, PR-gated releases; an MCP server lets AI coding agents run Maya, Blender, and Unity operations in isolated instances.

6 packages on PyPI	**29,000+** automated tests
50 artist tools	**3** hosts: Maya, Blender, Unity

Packages: pythontk, uitk, mayatk, blendertk, tentacle, extapps