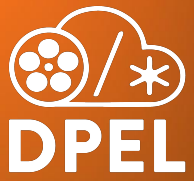
DPEL

Digital Production Example Library

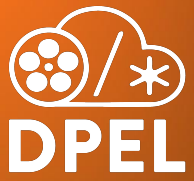
Annual Project Review

September 2025



A library of ***digital assets*** -
3D scenes, digital cinema footage, etc. -
that demonstrate the ***scale*** and ***complexity*** of
modern feature film production,
including computer graphics, VFX and animation.

Curated by the Academy Software Foundation,
these assets are available free of charge
to ***researchers*** and ***developers***
of both open source and commercial projects,
to ***test, demonstrate, and inspire*** their ideas.



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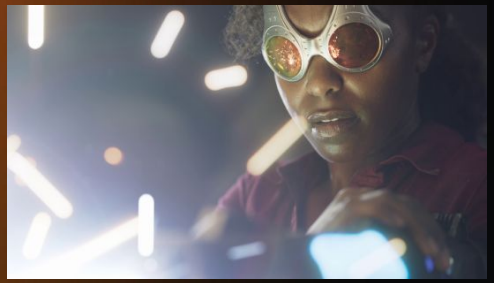
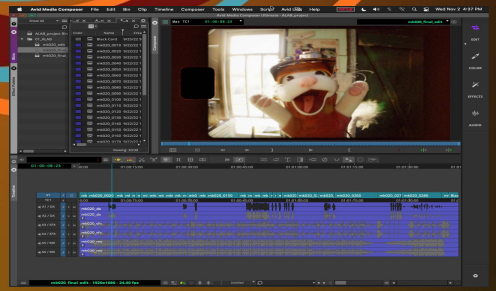
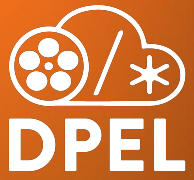




#ASWF /* ACADEMY SOFTWARE FOUNDATION



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<Asset Name> Copyright <Year> <Asset Owner>. All rights reserved.

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…

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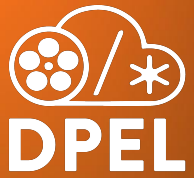

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DPEL

AN /* ACADEMY SOFTWARE FOUNDATION PROJECT

DPEL

Digital Production Example Library

A library of **digital assets** - 3D scenes, digital cinema footage, etc. - that demonstrate the **scale** and **complexity** of modern feature film production, including computer graphics, visual effects and animation. Curated by the Academy Software Foundation, these assets are available free of charge to **researchers** and **developers** of both open source and commercial projects, to **test, demonstrate, and inspire** their ideas. See our license template. You can find us on Slack at #assets, or on our mailing list.

News

New Assets

New from Netflix Animation Studios, the NAS Sole Mates - HDR Production Example provides an ACES 2.0 and OpenEXR High Dynamic Range compositing example, and new from Adobe, the OpenPBR Shader Playground scene illustrates a new look-development paradigm using OpenPBR, MaterialX, and OpenUSD. Links below!

Other Assets

Here is a short list of computer graphics assets available elsewhere.

Assets

NAS Sole Mates - HDR Production Example

SoleMates is an HDR production example made with ALab. It is a complete compositing example that includes Nuke Script, EXR sequences, and high dynamic range render layers and media.

DOWNLOADS PAGE | GITHUB REPOSITORY

OpenPBR Shader Playground

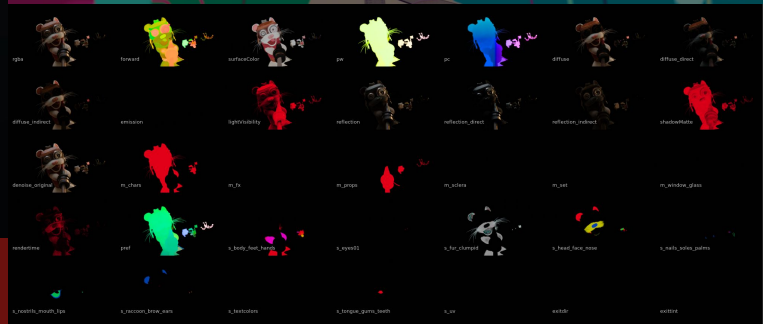
OpenPBR Shader Playground is a MaterialX and OpenUSD asset created by Adobe to illustrate a modern look-development approach using the OpenPBR Surface Shading Model developed by Adobe and Autodesk. The asset is a whimsical take on a child's arts-and-crafts space, using materials that demonstrate novel aspects of the OpenPBR specification.

DOWNLOADS PAGE

OpenPBR Shader Playground

- Contributed by **Adobe**
- Additional contributions from **NVIDIA**
- Novel aspects of **OpenPBR Surface**
- OpenPBR nodes within **MaterialX** documents (1.39) referenced into **OpenUSD** scene (0.25.5)
- Imageable within **Arnold** and **Omniverse**

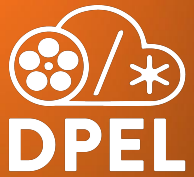
Sole Mates - HDR Production Example



- Contributed by **Netflix Animation Studios**
- Complete 61-frame **compositing package**
- Includes HDR render layers, Nuke script, and media
- Created using **DPEL NAS ALab** Asset
- **ACES 2.0**, **OpenColorIO** & **OpenEXR**

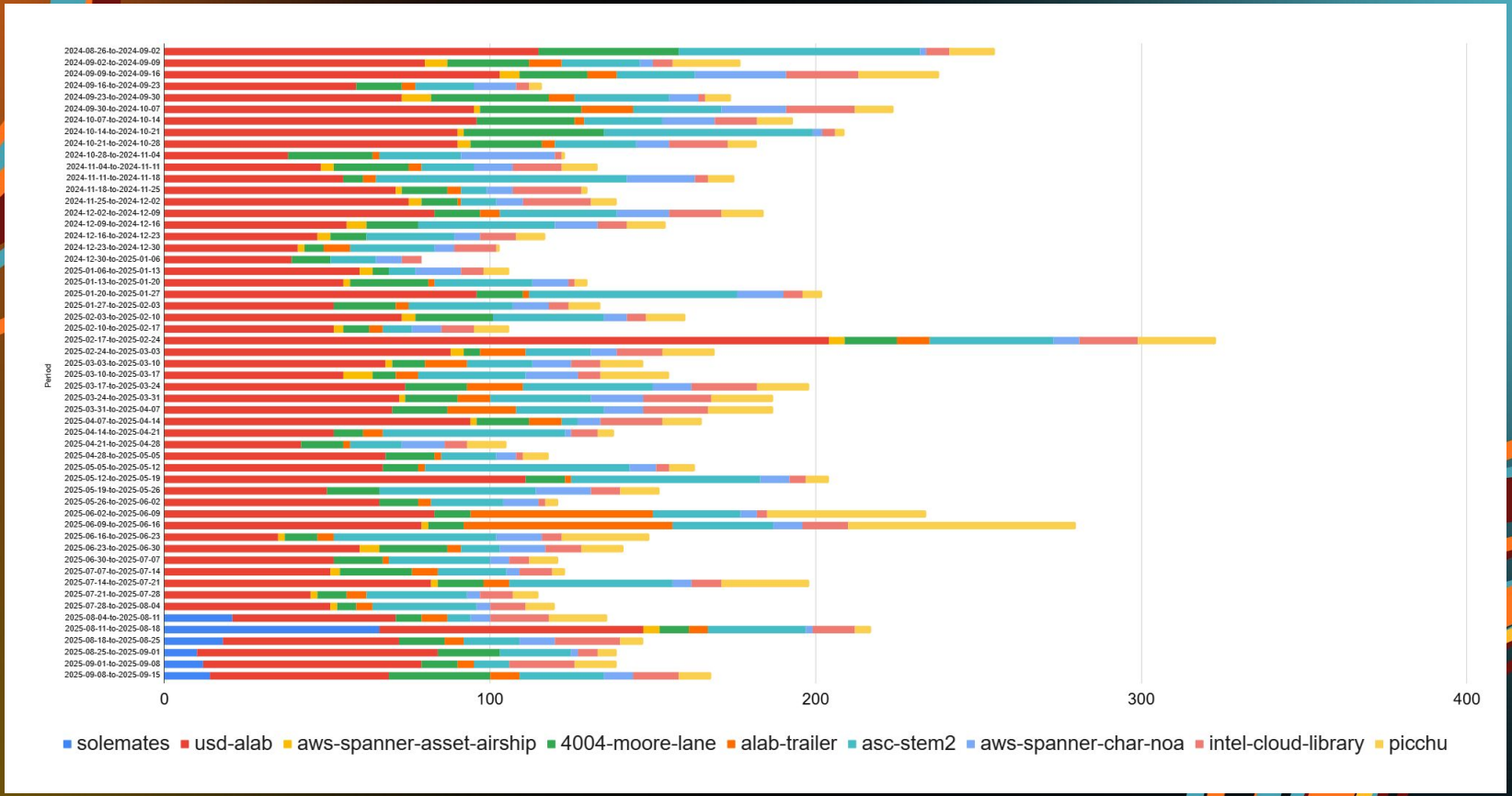
Future Assets: ASC StEM v3

- Reference material for **Virtual Production / ICVFX**
- From ASC **Joint Committee on Virtual Production**
- Mix of **2D & 3D assets**
- Contributions from **numerous studios**
- Shooting at Amazon Studios Los Angeles in October



Download Statistics

DPEL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2024-09-09-to-2024-09-16
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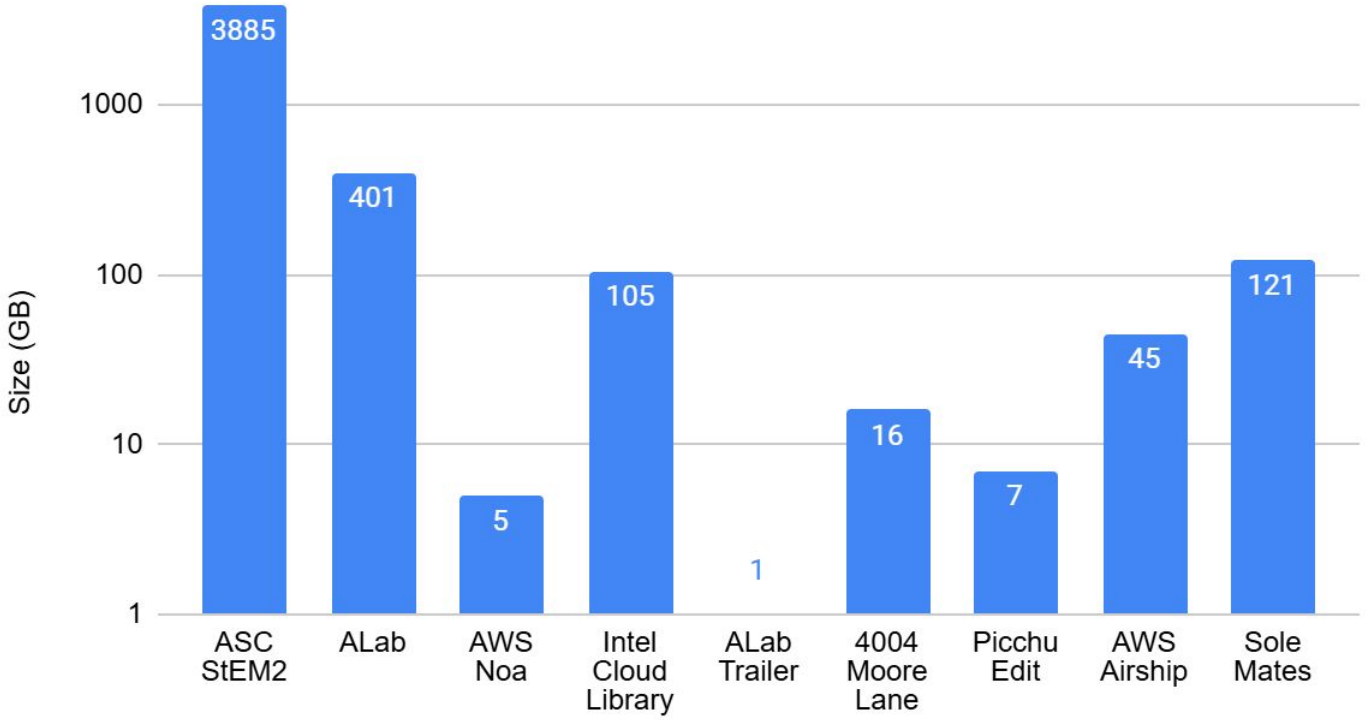
usd-alab
aws-spanner-asset-airship
4004-moore-lane
alab-trailer
asc-stem2
aws-spanner-char-noa
intel-cloud-library
picchu

DPEL

DPEL Asset Size



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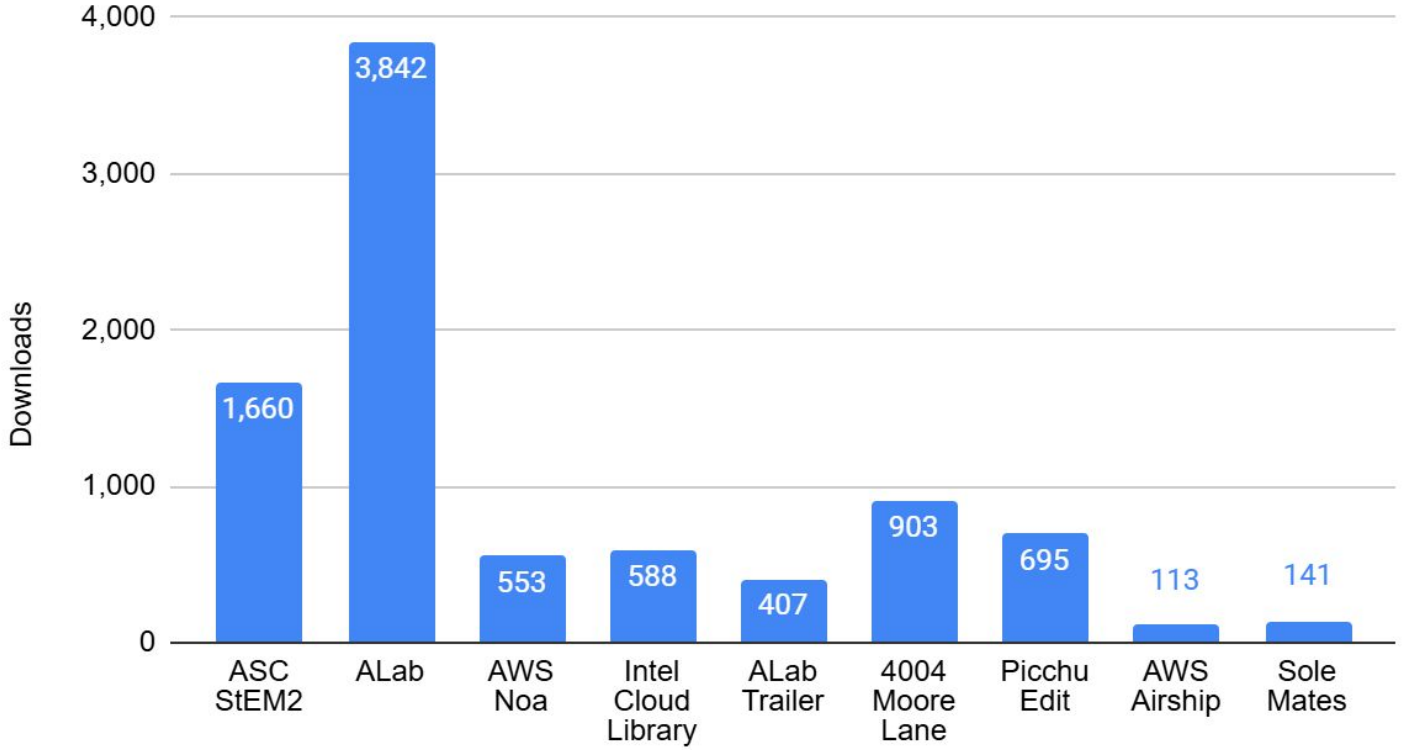
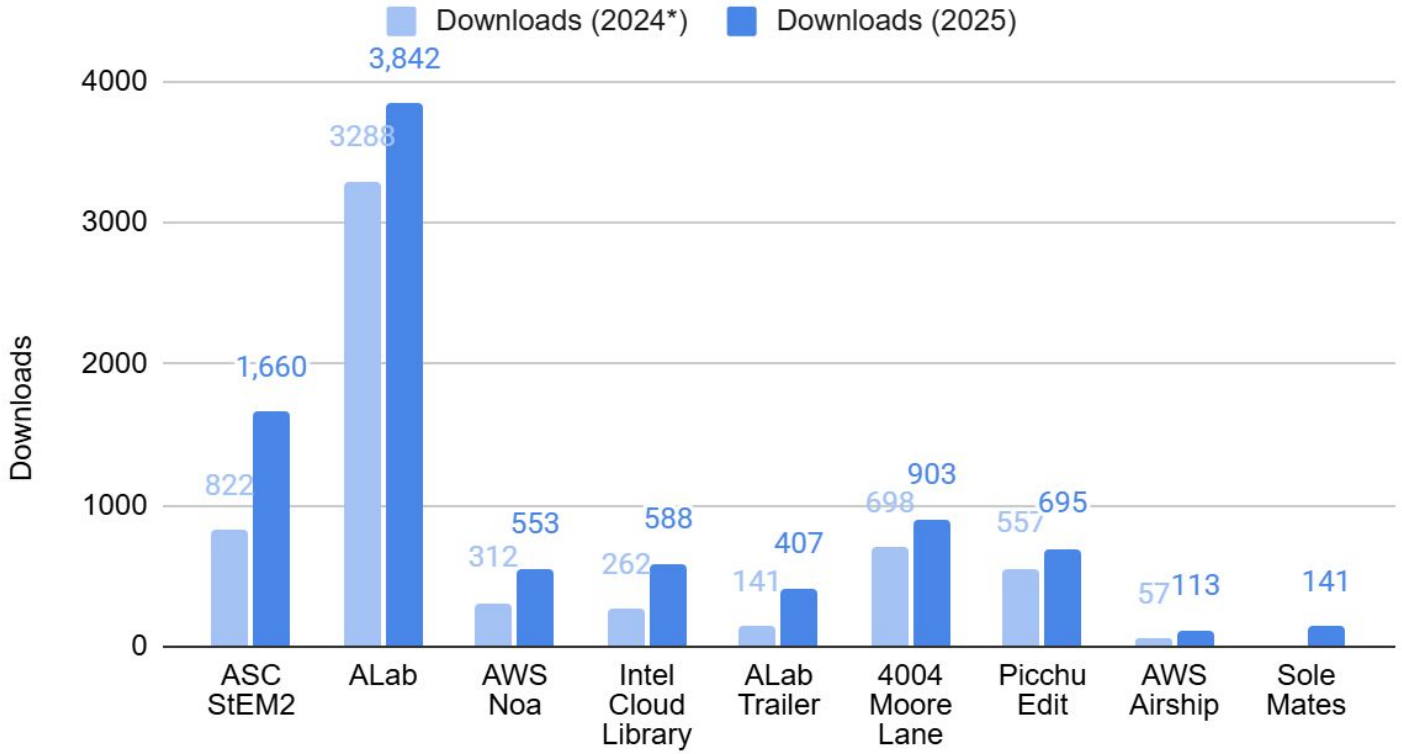
DPEL Asset Downloads



DPEL

DPEL Asset Downloads



Challenges & Opportunities (2024)

Not a source code project

Contributions are substantial and singular

Lower engagement, collaboration, and TSC stability

Lower barriers to contribution

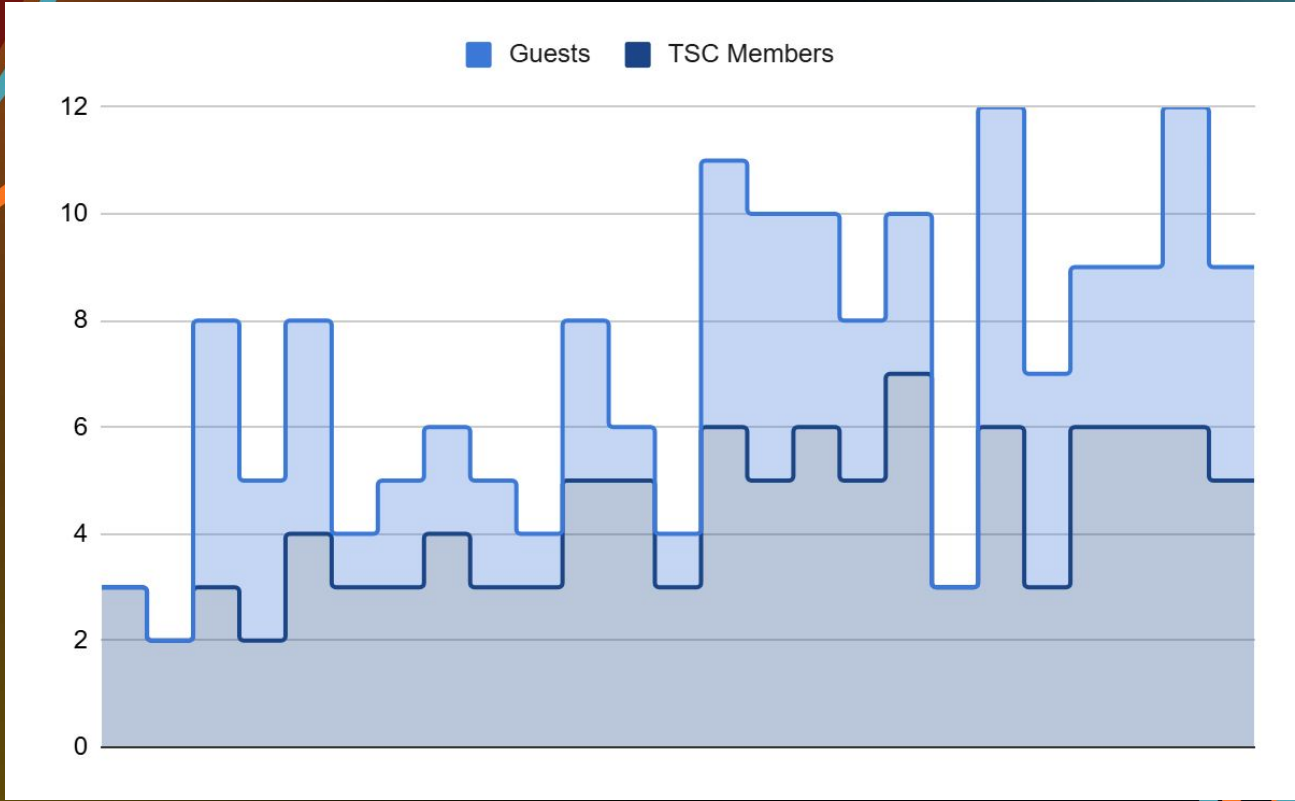
Create source code components

Grow visibility and stabilize TSC

Technical Steering Committee

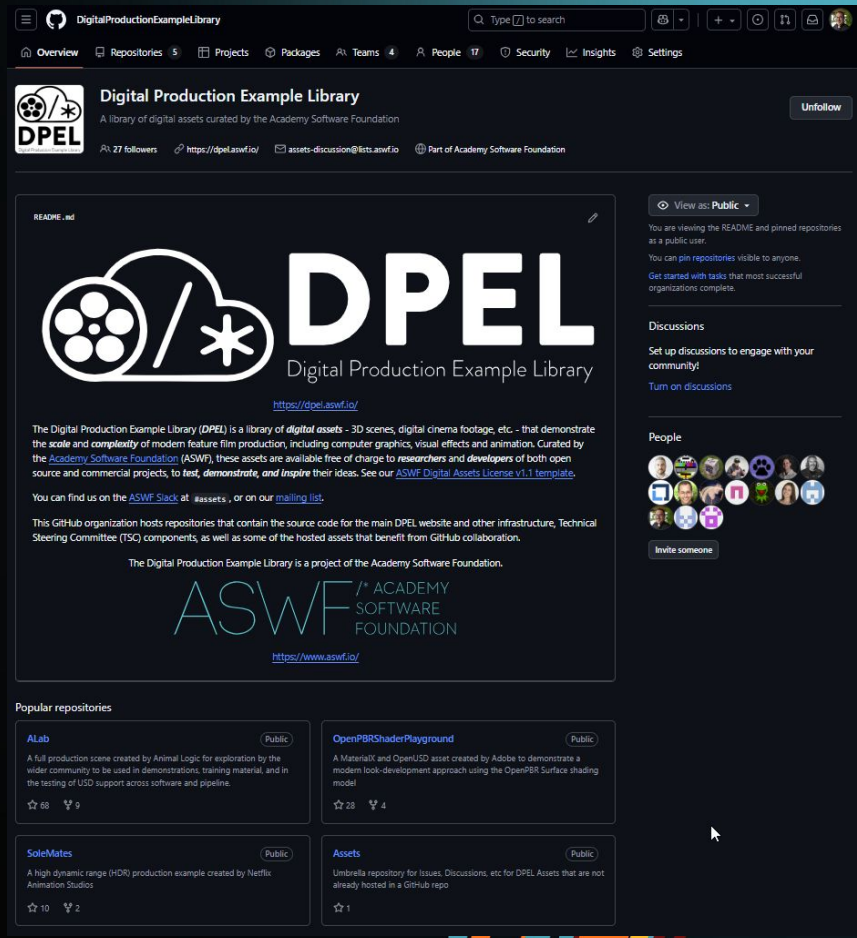
- **Matthew Low** | DreamWorks, Chair
- **Ben Fischler** | Autodesk
- **Darin Grant** | Netflix Animation
- **Eric Enderton** | NVIDIA
- **Haley Kannall** | Amazon Web Services
- **Michael Johnson** | Apple
- **Nick Porcino** | Pixar
- **Pallav Sharma** | Autodesk
- **Satish Goda** | Netflix Animation
- **Sean McDuffee** | Intel

Technical Steering Committee



GitHub for Asset Hosting

- Enable greater **discoverability** and **collaboration**
- More **readable**, **explorable**, **linkable**
- Better documentation with **GitHub Pages**
- Encourage **contributions**
- Best for assets restructured into **smaller text files**

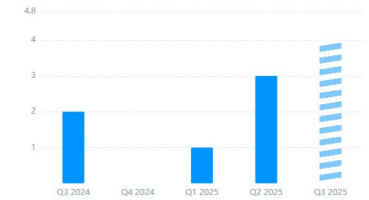


Digital Production Example Library (DPEL) / dpel-website — Sep 15, 2024 → Sep 15, 2025

Active contributors

7 — 50% (-7) vs. 14 last period

quarterly active contributors



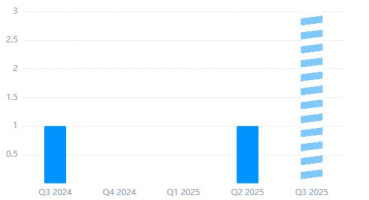
LFX Insights

Digital Production Example Library (DPEL) / ALab — Sep 15, 2024 → Sep 15, 2025

Active contributors

4 — 20% (-1) vs. 5 last period

quarterly active contributors



LFX Insights

Digital Production Example Library (DPEL) / SoleMates — Sep 15, 2024 → Sep 15, 2025

Active contributors

3 — 100% (+3) vs. 0 last period

quarterly active contributors

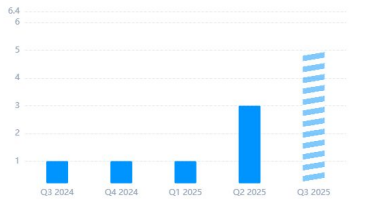
LFX Insights

Digital Production Example Library (DPEL) / OpenPBRShaderPlayground — Sep 15, 2024 → Sep 15, 2025

Active contributors

5 — 100% (+5) vs. 0 last period

quarterly active contributors



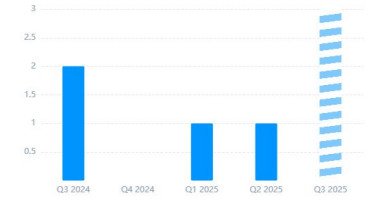
LFX Insights

Digital Production Example Library (DPEL) / dpel-website — Sep 15, 2024 → Sep 15, 2025

Active organizations

4 — 42.9% (-3) vs. 7 last period

quarterly active organizations



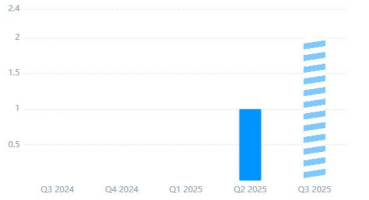
LFX Insights

Digital Production Example Library (DPEL) / ALab — Sep 15, 2024 → Sep 15, 2025

Active organizations

3 — 50% (+1) vs. 2 last period

quarterly active organizations



LFX Insights

Digital Production Example Library (DPEL) / SoleMates — Sep 15, 2024 → Sep 15, 2025

Active organizations

3 — 100% (+3) vs. 0 last period

quarterly active organizations

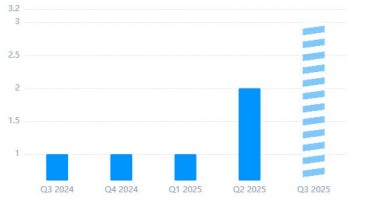
LFX Insights

Digital Production Example Library (DPEL) / OpenPBRShaderPlayground — Sep 15, 2024 → Sep 15, 2025

Active organizations

3 — 100% (+3) vs. 0 last period

quarterly active organizations



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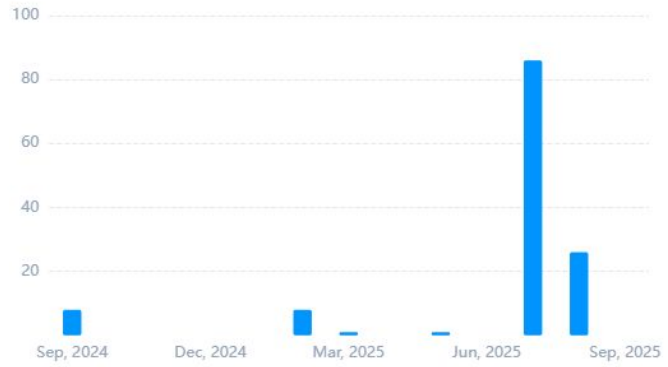
Digital Production Example Library (DPEL)

Sep 15, 2024 → Sep 15, 2025

Commit Activities

130 ↑ 4% (+5)
vs. 125 last period

monthly new commits



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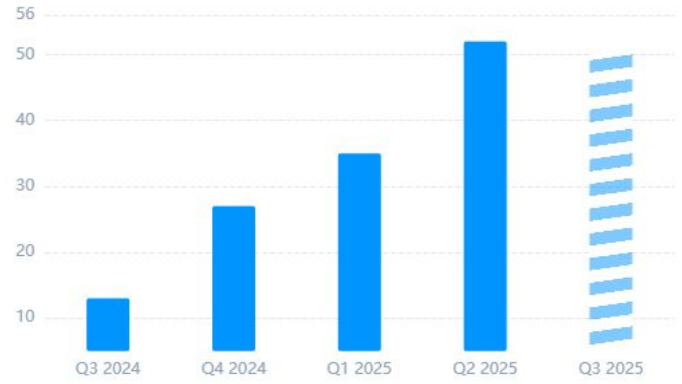
DPEL

Digital Production Example Library (DPEL) — Sep 15, 2024 → Sep 15, 2025

Active contributors

113 ↑ 197.4% (+75)
vs. 38 last period

quarterly active contributors



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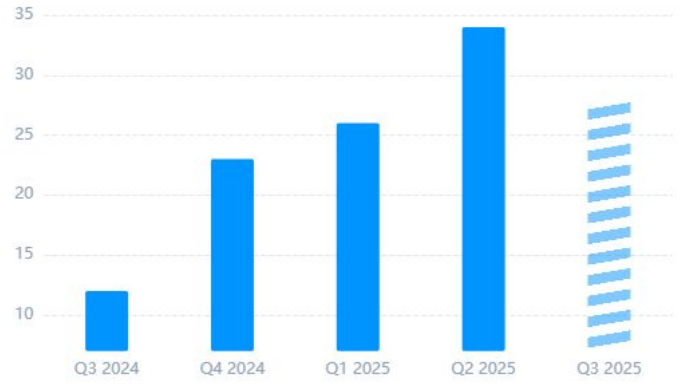
Digital Production Example Library (DPEL) — Sep 15, 2024 → Sep 15, 2025

Active organizations

68 ↑ 223.8% (+47)
vs. 21 last period

quarterly active organizations



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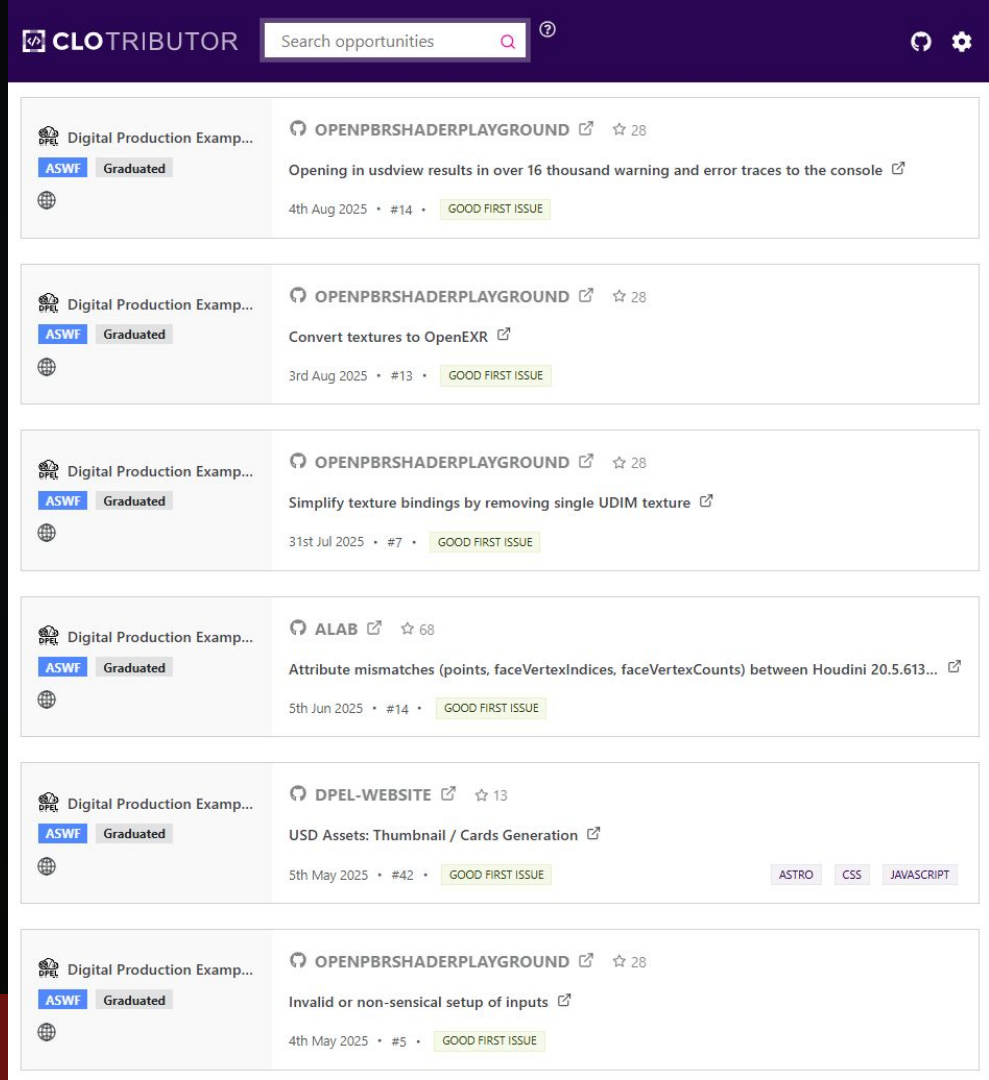
DPEL

CLOTributor & Dev Days



ASWF Collaborations

DPEL

MATERIALX

openpbr

AUTODESK Arnold

OpenPBR - Arnold User Guide

- Introduction
- Material Types
- Energy Conservation
- Material Presets

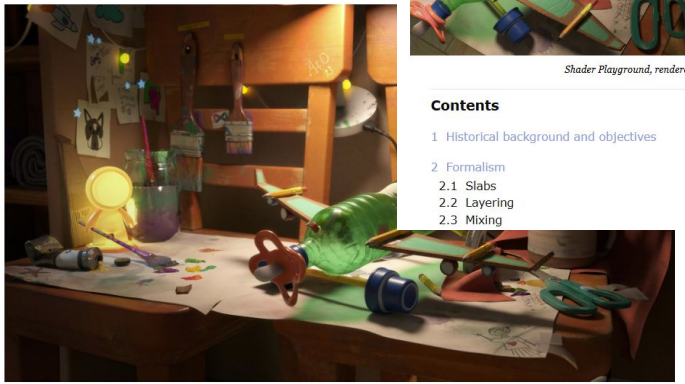


Image by Nikie Monteleone

Introduction

OpenPBR Surface is a digital material model designed as a collaboration between the teams at Adobe and Autodesk, under the guidance of the MaterialX Technical Steering Committee. OpenPBR Surface is a step towards more convergence in the industry and more efficient workflows for 3D content creators. It is a physically based surface model based on Autodesk Standard Surface and Adobe Standard Material and is therefore an evolution of two production-proven models.

OpenPBR Surface

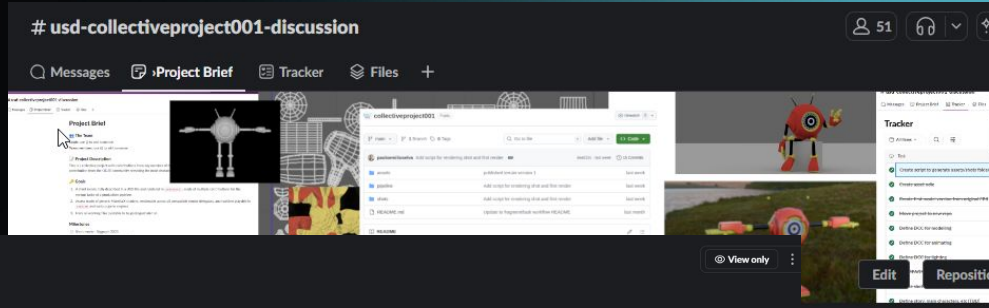
Specification v1.1, 2024-06-28. ASWF

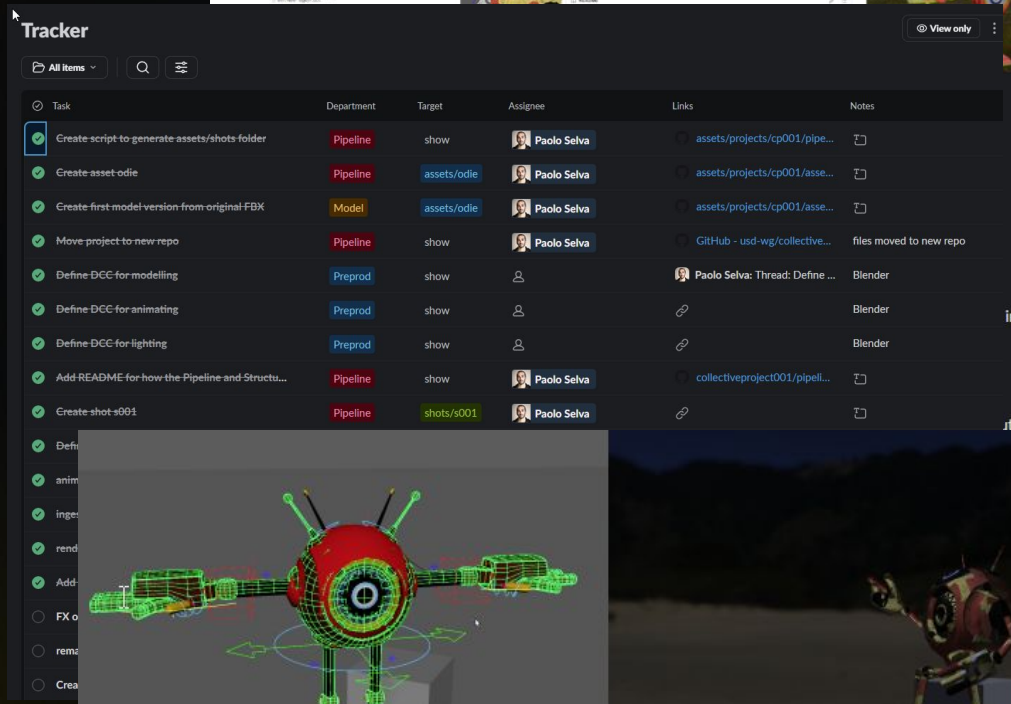
This document is a specification of a surface shading model intended as a standard for computer graphics: the OpenPBR Surface model. Designed as an über-shader, it aims to be capable of accurately modeling the vast majority of CG materials used in practical visual effects and feature animation productions. The model has been developed as a synthesis of the Autodesk Standard Surface and the Adobe Standard Material models.

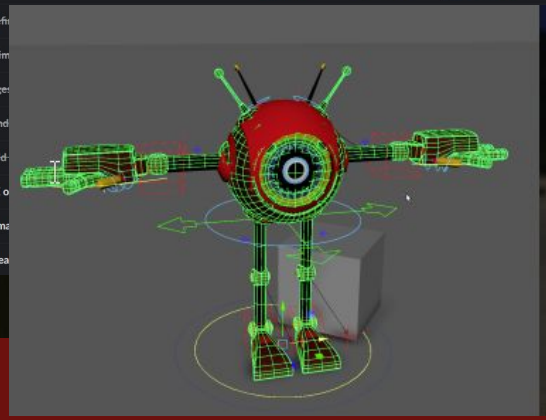
Shader Playground, rendered in Arnold for Maya, using OpenPBR Surface.

Contents

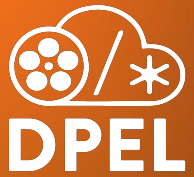
ASWF Collaborations







USDWG



Spotlight:
DPEL in the Wild

DPEL

TheYardVFX / usd-render-benchmark

Code | Issues 1 | Pull requests | Actions | Projects | Security | Insights

main | usd-render-benchmark / README.md | Go to file t

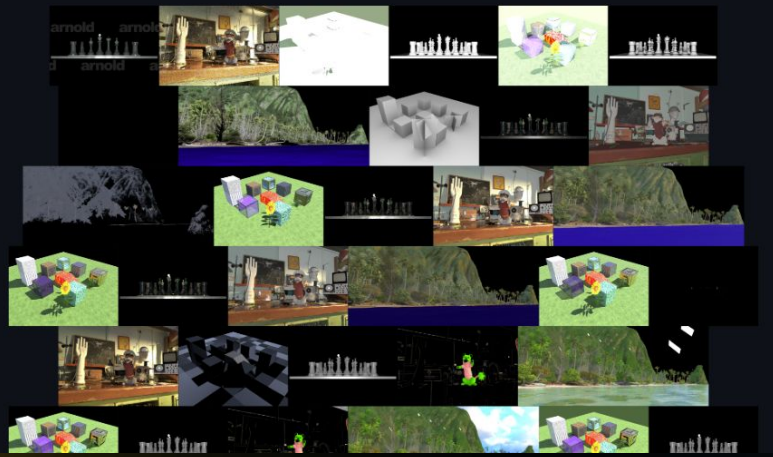
nicolaspopravka and Nicolas Popravka Initial commit 04b592e · last year

145 lines (103 loc) · 5.91 KB

Preview | Code | Blame | Raw

USD Render Benchmark

`usd-render-benchmark` is a testing and benchmarking suite for evaluating various Hydra render delegates using Universal Scene Description (USD) scene files. This project aims to help developers and users of Hydra renderers identify performance and output differences across different renderers when rendering the same set of USD scenes.



DPEL

Universal Scene Description

Search docs

LEARN
- Introduction to USD
- Introduction to OpenExec
- Terms and Concepts
- Tutorials
- Downloads and Videos
- Products Using USD

USER GUIDES
- Collections and Patterns
- Color
- Namespace Editing
- Rendering with USD
- Primvars
- Schema Domains
- Variable Expressions

REFERENCE
- API Documentation
- Toolset
- Specifications
- Proposals
- FAQ
- Performance Considerations

Performance Metrics
- What We Measure
- What Environment Is Used
- Metrics
  - Performance Graphs Per Platform
  - Standard Shader Ball
  - Kitchen Set
  - ALab
  - Moore Lane

ALab

ALab is a full production scene created by Animal Logic and contains
and two characters with looping animation in shot context. Supplied
high-quality textures, shot cameras matching the ALab trailer, and ba
characters.

The metrics have been measured with the base asset merged with th

The ALab asset can be downloaded here.

Linux Metrics (min/max/mean in secon

Metric	24.11	25.02		
Open stage	min: 0.310876 max: 0.559342 mean: 0.45541184	min: 0.366469 max: 0.572984 mean: 0.46845559		
Render first image	min: 6.263032 max: 6.588806 mean: 6.37429557	min: 5.838728 max: 6.283033 mean: 6.02255179	max: 6.837958 mean: 6.59283339	max: 6.940207 mean: 6.45966857
Close stage	min: 0.082208 max: 0.094923 mean: 0.08732031	min: 0.080918 max: 0.097433 mean: 0.08620824	min: 0.079803 max: 0.091238 mean: 0.08427517	min: 0.07944 max: 0.090767 mean: 0.08443618

Moore Lane

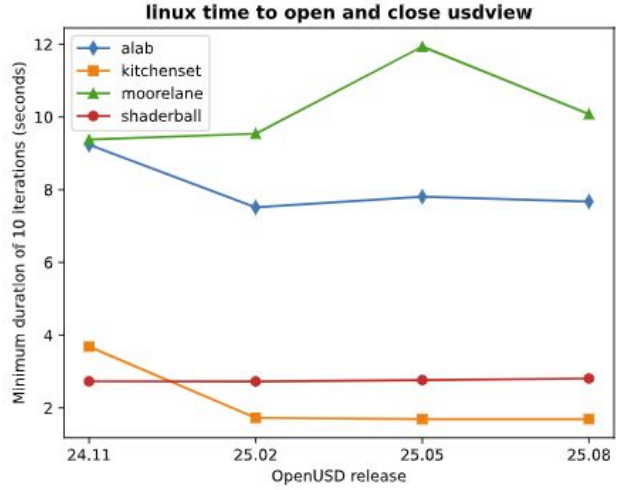
4004 Moore Lane is a fully composed, high-quality scene for the purpose of testing various visual computing issues. The house itself was wrapped around a number of typical problem areas for light transport and noise sampling. This includes things like thin openings in exterior walls, recessed area light sources, deeply shadowed corners, and high-frequency details. The exterior landscape surrounding the house consisted of a relatively simple ecosystem of instanced plants which could provide some additional levels of complexity. In addition to the geometry itself being designed to exacerbate some typical issues, the USD structure itself was created for several layers of testing.

The metrics have been measured using the contained `MooreLane_ASWF_0623.usda` file.

The Moore Lane asset can be downloaded here.

Linux Metrics (min/max/mean in seconds)

Metric	24.11	25.02	25.05
Open stage	min: 0.060106 max: 0.094095 mean: 0.06963074	min: 0.062317 max: 0.081489 mean: 0.06682641	min: max: mean
Render first image	min: 7.795811 max: 9.181277 mean: 8.6200326	min: 7.998376 max: 9.319934 mean: 8.65048405	min: max: mean
Close stage	min: 0.029277 max: 0.035983 mean: 0.03220747	min: 0.029957 max: 0.03481 mean: 0.03219554	min: max: mean
	min: 0.075833	min: 0.078658	min:



DPEL

No Consistency in Lighting Between Renderers

UsdLux was underspecified

- Same layer in different renderers produces wildly different results
- Cannot author a scene in one DCC and expect to get same render elsewhere
- Difference is due to interpretation of light attributes

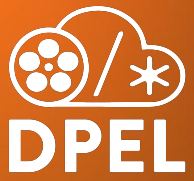
KARMA

ARNOLD

RTX

NVIDIA


THE FASTEST, SIMPLEST WAY
FROM PIPELINE TO WALL



Challenges & Opportunities

- ✓ Not a source code project
- ✓ Contributions are substantial and singular
- ✓ Lower engagement, collaboration, and TSC stability

- Lower barriers to contribution ✓
- Create source code components ✓
- Grow visibility and stabilize TSC ✓

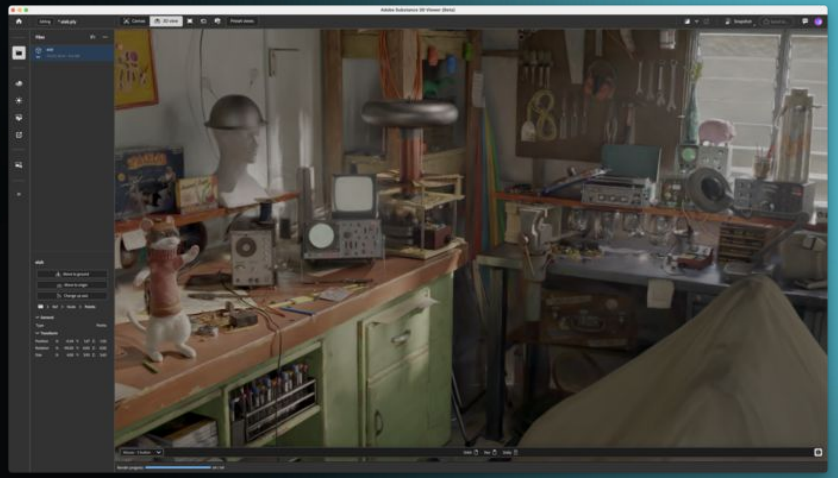
Machine Learning Implications for DPEL

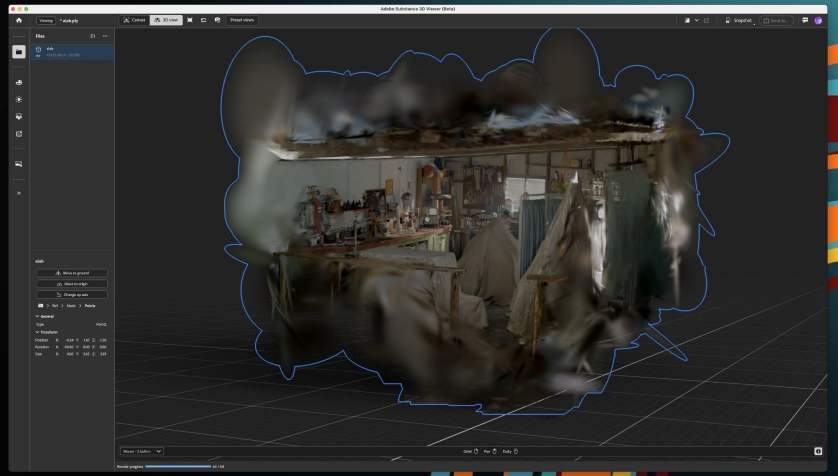
Does License allow training ML models using DPEL Assets?

- License mentions “training”
- Considered revised License with an explicit stance
- Varying views on “fair use” from copyright holders
- FAQ: “It depends” on the use case

What areas of ML does DPEL want to explore?

Future Assets: ALab Gaussian Splats





- **Gaussian Splat** variant (PLY) of **ALab** from NAS
- Differentiable rendering
- Interest from **Apple, Adobe, Nvidia**
- **OpenUSD Splat Schema** proposal
- ASWF & DPEL can **lead by example**

DPEL

Digital Production Example Library