FTV500011

Driving Open Standards in Film & TV Production

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Learning Objectives

- Understand several key open source standards and the production challenges they solve.
- Learn about the collaboration between tech partners and creative studios driving the development of key open standards.
- Understand how open standards are integrated into studio pipelines today, and the vision for the future.
- Know where to go for additional resources on key open source initiatives.

Description

Open source software plays a critical role in the creation of Film and TV content. In this panel discussion, we'll dive into the work behind OpenColorIO v2, MaterialX, and Universal Scene Description (USD), including collaboration with tech partners and creative studios.

The communities that have formed around these key open source projects have allowed them to become *de facto* standards, enabling more efficient and collaborative pipelines. Along with our customers, Autodesk has been investing heavily in open source development. We have a shared vision for how these projects can form a baseline infrastructure for modern filmmaking.

The discussion will focus on three projects that are seeing wide adoption across studios and vendors: OpenColorIO, MaterialX, and USD. OpenColorIO allows customers to rigorously specify the colour management configuration for a given project. MaterialX provides a way to define and share very rich material and look-development content between applications and renderers. USD provides a way to robustly and scalably interchange and augment arbitrary 3D scenes that may be composed from many elemental assets.

Resources

OpenColorIO
- https://opencolorio.org
- https://github.com/AcademySoftwareFoundation/OpenColorIO

MaterialX
- http://www.materialx.org/
- https://github.com/materialx/MaterialX

Universal Scene Description (USD)
- Fabrice's AU talk: "From In-House to Off-the-Shelf: USD in production at Animal Logic" (course FTV500008), October 7, 2021
- USD ALab — Real world production quality USD scene:
  - https://animallogic.com/usd-alab/
- Detailed introduction:
  - https://graphics.pixar.com/usd/docs/Introduction-to-USD.html

Academy Color Encoding System (ACES)
- https://www.oscars.org/science-technology/sci-tech-projects/aces
- https://acescentral.com/

Academy Software Foundation (ASWF)
- https://www.aswf.io/
- Check out the full Open Source Days 2021 program:
  https://www.youtube.com/playlist?list=PL9dZxafYCWmxAamvhGMN1Ao6pRso1u2VY
- Check out the Diversity & Inclusion Webinar Series — Careers in Film and Tech:
  https://www.youtube.com/playlist?list=PL9dZxafYCWmyXoXQ945n_9hTNWFxOCs2t

All of the above organizations have active mailing lists and discussion forums (often on Slack), please see the project pages above for more info and join the conversations!

Speakers

Carol Payne — Imaging Technologist, Netflix

Carol Alynn Payne started her career in visual effects, working for six years at Industrial Light & Magic, a Lucasfilm Company, most prominently as Color & Imaging Engineer. It was there she found her passion - in how we capture, create, digitally manipulate, and display imagery to make content shine. At ILM, Carol worked on over 30 films, including The Irishman, Star Wars: The Last Jedi and Avengers: Infinity War. In May 2019, Carol joined Netflix as Imaging Technologist on the Creative Technology team, focused on standards of the future and how we can best utilize imaging technology to preserve creative intent. Carol is a Virtual Working Group chair for the Academy Color Encoding System (ACES), as well as a Technical Steering Committee member of OpenColorIO, and a chair of the Academy Software Foundation's Diversity & Inclusion Working Group. Active in SMPTE and ACM SIGGRAPH, she's also a founding member of Women in Visual Effects.

Jonathan Stone — Lead Rendering Engineer—Materials and Shading, Lucasfilm

Jonathan Stone is a Lead Rendering Engineer in the Lucasfilm Advanced Development Group and the lead developer of MaterialX. He has designed real-time rendering and look-development technology for Lucasfilm since 2010, working on productions including The Mandalorian, Star Wars: The Force Awakens, and Pacific Rim. Previously he led graphics development at Double Fine Productions, where he designed the rendering engines for Brütal Legend and Psychonauts.

Fabrice Macagno — Technical Lead—Scene Description, Animal Logic

I have been working in the VFX industry for almost 20 years, joining Animal Logic (Sydney) 5 years ago, where I lead the Scene Description team: our goal is to provide a fast and flexible scene building and authoring platform to artists, TDs and production staff. We love USD and all it has to offer! I am passionate about large scale/complex project issues such as highly collaborative environments, robustness and scalability.

Will Telford — Senior Product Owner, Autodesk

Will Telford is an alumnus of Rhythm & Hues studios where he served as a Visual Effects Supervisor, Digital Effects Supervisor, Creature Supervisor, and Rigging Supervisor working on dozens of films including credits on "Harry Potter and the Sorcerer's Stone" as well as "The Chronicles of Narnia: The Lion, the Witch and the Wardrobe". Will was a founding partner of Blackthorn Media whose VR experiences have been featured at both Sundance and the Tribeca Film Festival. He went on to join Blizzard Entertainment contributing to cinematics spanning their line of games. Currently, Will is the Senior Product Owner for USD and Rigging for the Maya team at Autodesk where he has helped launch Maya's deep integration of USD as well as usher in foundational procedural changes to Maya's rigging tools.

Doug Walker — Technology Lead—Color Science, Autodesk

Doug Walker is the Technology Lead for Color Science in the Autodesk Entertainment & Media Solutions group, based in Montreal. He works on color-related features in products such as Flame and Maya. He is also very active in open source projects, serving as the Chief Architect on the OpenColorIO Technical Steering Committee and as part of the Architectural Technical Advisory Council for the Academy of Motion Picture Arts & Science's ACES project. He led the team of Autodesk engineers that developed OpenColorIO v2. Previously, he was Senior Principal Color Scientist at the Eastman Kodak Company, where he also served as liaison to the American Society of Cinematographer's Technology Committee.