



DreamWorks Animation Announces the Release of MoonRay as Open Source Software

Glendale, Calif. - March 15, 2023 - DreamWorks Animation is pleased to announce MoonRay, their production renderer, is now available as open source for general access. The company announced their intent to make this move at SIGGRAPH 2022 generating thousands of requests for information. Since then, DreamWorks has worked diligently on the code base, improved documentation, and interface with prerelease partners to demonstrate MoonRay can be built outside of the DreamWorks studio. The code base is now available at OpenMoonRay.org under the [Apache 2](#) open source license.

"I am tremendously proud of the MoonRay team that carefully engineered the renderer with a strict adherence to core multi-processing principles. MoonRay delivers interactive artistic exploration using all cores or GPUs provided", said Andrew Pearce, VP of Global Technology at DreamWorks Animation. "Like DreamWorks, MoonRay was born at the intersection of art and science. We are eager to see what the wider artist and developer community will do with MoonRay".

DreamWorks' in-house Monte Carlo Ray Tracer, MoonRay, was designed with a focus on efficiency and scalability. The developers' mantra is to "...keep all the vector lanes of all the cores of all the machines busy all the time with meaningful work", and additionally provide modern features for full artistic expression. It delivers a broad range of images from photorealistic to strongly stylized. MoonRay is built on a leading-edge, highly-scalable architecture, allowing quick, feature-film quality artistic iteration using familiar tools. Additional high-performance features include support for distributed rendering, a pixel matching XPU mode, photo-realistic ray tracing acceleration via Intel® Embree, including Open Image Denoise, and other aspects of oneAPI. MoonRay includes a USD Hydra render delegate for integration into content creation tools supporting that standard.

Since announcing the intended release in August of 2022, the MoonRay team has worked with a small set of beta testers to adapt the code base so that it can be built and run outside of DreamWorks' pipeline environment. Conversion of the build system to an industry standard

CMake environment was completed, a new documentation website was built, libraries restructured, dependencies reduced, and referenced open source packages were brought up to current release versions, in addition to the enhancements and features delivered for DreamWorks' productions along the way.

"The open source release of MoonRay brings a state-of-the-art production renderer to the hands of artists, content creators, and practitioners in realistic simulation empowering community innovation. As part of this release and in collaboration with DreamWorks, MoonRay users have access to Intel technologies, Intel ®Embree and oneAPI tools, as building blocks for an open and performant rendering ecosystem." says Anton Kaplanyan, vice president, graphics research at Intel.

"We're delighted to demonstrate DreamWorks' continued commitment to open source with the contribution of MoonRay. Our involvement with the community has made us stronger and we look forward to that continued collaboration", said Bill Ballew, Chief Technology Officer at DreamWorks Animation.

Documentation, code access, online forums, demonstration videos, and other information are available now at OpenMoonRay.org.

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DreamWorks Animation (DWA), a division of the Universal Filmed Entertainment Group, within NBCUniversal, a subsidiary of Comcast Corporation, is a global family entertainment company with feature film and television brands. The company's deep portfolio of intellectual property is supported by a robust, worldwide consumer products practice, which includes licensing, and location-based entertainment venues around the world. DWA's feature film heritage includes many of the world's most beloved characters and franchises, including *Shrek*, *Madagascar*, *Kung Fu Panda*, *How to Train Your Dragon*, *Spirit*, *Trolls*, *The Boss Baby* and 2022's *The Bad Guys* and *Puss in Boots: The Last Wish* have amassed more than \$15 billion in global box office receipts. DreamWorks Animation's television studio is one of the world's leading producers of high-quality, animated family programming, reaching consumers in more than 190 countries with a diverse array of award-winning original content through streaming and linear broadcasters.

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Intel® Embree is a high-performance ray tracing library, also part of the [Intel® oneAPI Rendering Toolkit](#).