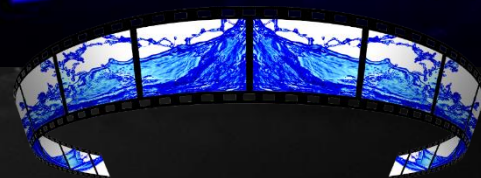


AMD

OpenVX™

Beta Preview Available on GPUOpen Now

Mike Schmit
Director Software Engineering, AMD
May 3, 2017



RADEON

LOOM

A Stitch In Real-time

AGENDA



- ▲ Design Goals
- ▲ Performance Optimization
- ▲ Graph Optimizer
- ▲ OpenCL Code Generator
- ▲ Prototyping Tools (RunVX and GDF)
- ▲ Examples

AMD OpenVX Design Goals



- ▲ High performance on x86 CPU (SIMD) and GPU (OpenCL)
- ▲ Open Source
- ▲ Microsoft Windows, Linux, Apple Mac
- ▲ Provide tools for easy testing and prototyping
- ▲ Full Khronos Conformance
- ▲ OpenCV interop

PERFORMANCE OPTIMIZED FOR X86 CPU AND GPU



- ▲ 200+ kernels hand-optimized for x86 with SIMD assembly instructions
 - **Ryzen performance !**
- ▲ 200+ kernels hand-optimized with OpenCL for AMD GPUs
- ▲ OpenCL code generator for functions such as **convolutions**

- ▲ The entire graph is analyzed for optimization opportunities prior to graph execution, such as
 - Merging of kernels to save bandwidth
 - Elimination of unused code
 - Prefetching of data into high speed local memory in the GPU
 - Optimum kernel selection

- ▲ Example with 360 Video Stitching follows

AMD RESEARCH CAMERA AND RADEON LOOM™ ON SET

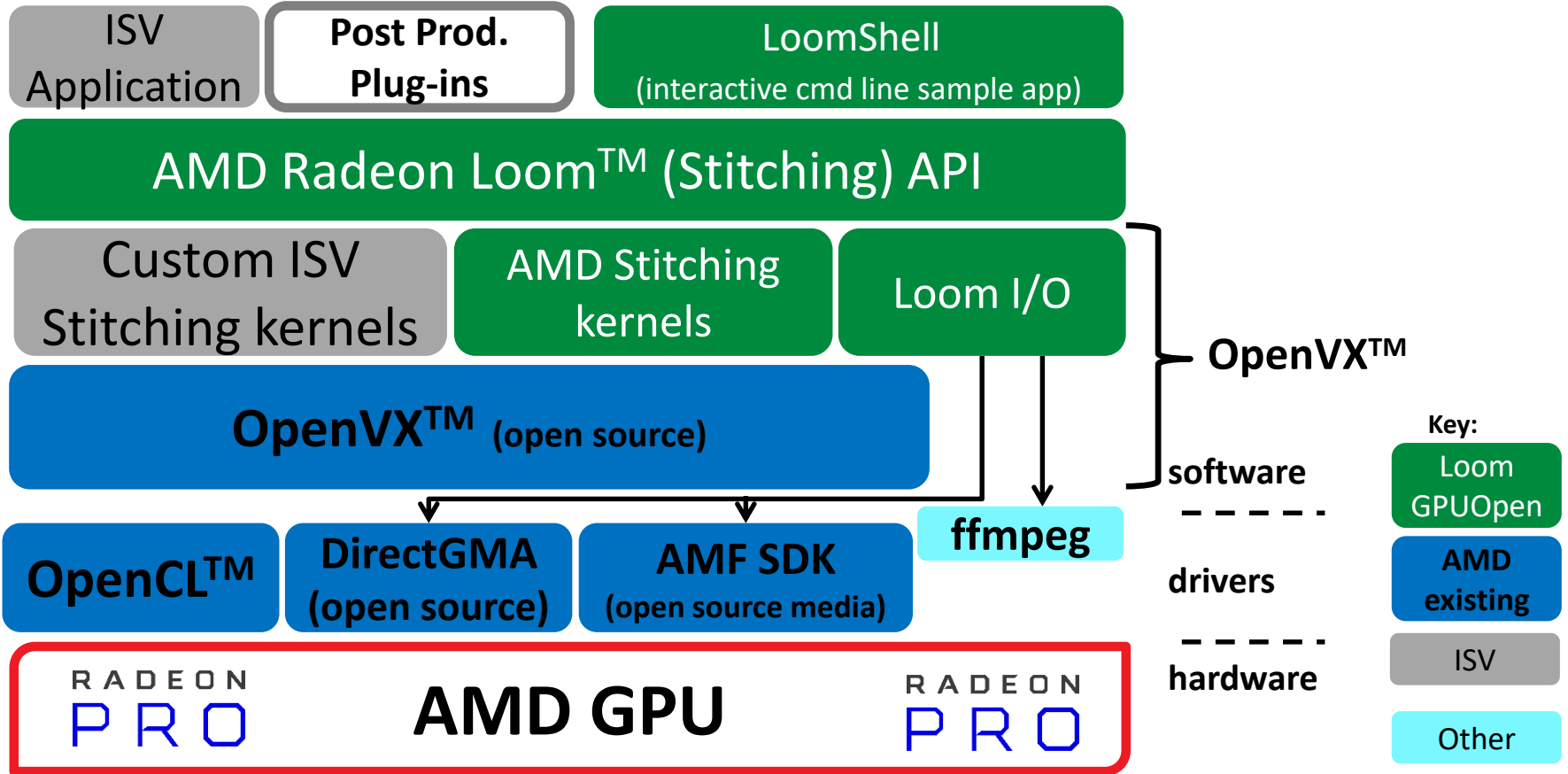


MAJOR FEATURES OVERVIEW

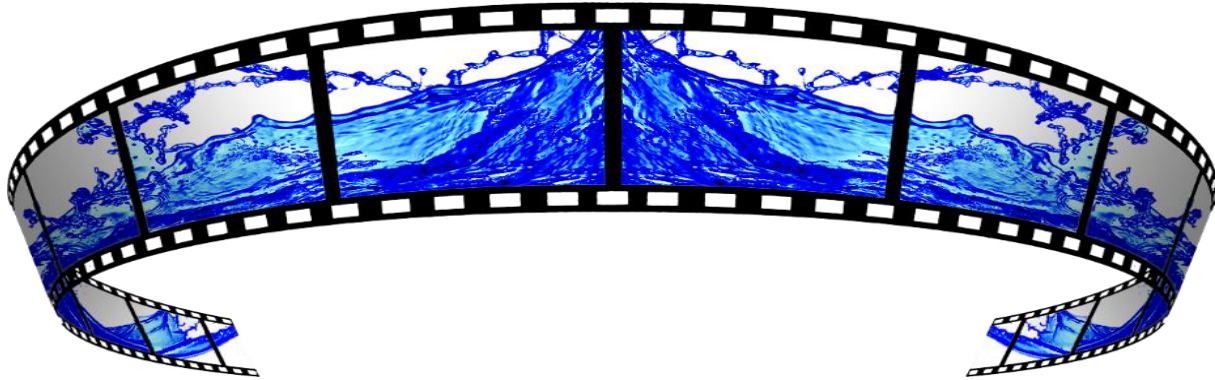


- ▲ **Open Source**
- ▲ Highly optimized for GPU
- ▲ Up to 8k x 4k stitched resolution in real-time on desktop PC with one GPU
- ▲ Up to 32 cameras with 5 overlapping cameras at each pixel
- ▲ Developers can add/replace nodes with their own IP (via OpenVX kernels)
- ▲ Virtual camera overlays, underlays and watermarking
- ▲ **Real-time** & offline modes

STITCHING SOFTWARE STACK



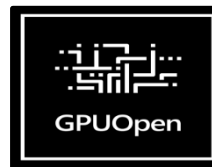
Q & A



Links



▲ (Start at www.gpuopen.com -- professional compute)



<http://gpuopen.com/compute-product/amd-openvx/>

<http://gpuopen.com/compute-product/radeon-loom/>

(From there you can find links to github)

Google search for code: **Radeon Loom**

Google search for movie trailer: **Baahubali VR experience**



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