Linux AR/VR

How to write apps using the OpenXR API

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Open First
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Talk to me about

- XR, VR & AR
- Volt Programming Language
- FPGAs & FOSS
- Amiga (FPGA), mc68k (LLVM)
- Voxel/SVO rendering
- FOSS & Society
- Joining Collabora!
● What is AR & VR
● OpenXR
● Status
● Wrapping up
• What is AR & VR <
• OpenXR
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What is Augmented Reality?

- **Augment**
  - verb
  - /ˈɔːɡmənt/
  - make greater by adding to it; increase
What is Virtual Reality?

- I reject your reality and substitute my own
  - Dungeonmaster, 1984
    - (popularized by Adam Savage)
What is AR & VR?

- Also known as XR
- $X = A \mid V$
- Not eXtended Reality
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How do we XR?

Program

Platform

Hardware
How is XR formed in the past?

- OpenHMD
- OSVR
- SteamVR
- Oculus
But!

Wow

- OpenHMD
- OSVR :D
  Much Freedom

No source

- SteamVR :
- Oculus :( Such Sad
Before OpenXR: Applications and engines needed separate proprietary code for each device on the market.
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**OpenXR** provides a single cross-platform, high-performance API between applications and all conformant devices.
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OpenXR provides a single cross-platform, high-performance API between applications and all conformant devices.
What is Khronos

- Industry group
  - OpenGL, Vulkan and ....
  - A foreign thing for most FOSS people
Participating members
Participating members
OpenXR

- C API
- API feel inspired by Vulkan
- Bindings
  - Python - [https://pypi.org/project/openxr/](https://pypi.org/project/openxr/)
  - Rust - [https://github.com/Ralith/openxrs](https://github.com/Ralith/openxrs)
Portable

- OS/Distro
- Hardware
Input

- Action based
- Not button
More information

- Unifying Reality: Building Experiences with OpenXR
  - By Ryan Pavlik
  - [https://youtu.be/F6jZCwko1Qs](https://youtu.be/F6jZCwko1Qs)

- MSDN
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Status on Linux

- Available on Linux
- Monado
- SteamVR
Engines

● FOSS
  ○ GODOT - https://godotengine.org/
  ○ LÖVR - https://lovr.org/
  ○ Blender

● Proprietary
  ○ Unreal (Linux supported in 4.27, out soon)
Where does Monado fit in?
Info

- Info
  - [https://monado.freedesktop.org/](https://monado.freedesktop.org/)
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XR FOSS Community
We are hiring

Open Source all day, every day
For over 13 years, we’ve helped clients navigate the ever-evolving world of Open Source, enabling them to develop the best solutions – whether writing a line of code or shaping a longer-term strategic software development plan.

Our team of engineers and developers are among the most motivated and active Open Source contributors and maintainers around the world. They have a passion for technology and strive to accelerate the adoption of Open Source technologies, methodologies and philosophy.

If you share this passion, and want to be part of a growing, globally distributed team, we want to hear from you!

Current Opportunities
Questions?
Thank you!