

Arthur Brainville

Software Engineer with 7+ years building XR and real-time graphics systems — compositing pipelines, GPU interop, and XR runtimes. Open to contract missions and full-time roles.

10 rue Philibert Fournier
53170 Meslay du Maine
France

📞 +33 6 33 96 69 59
✉ ybalrid@ybalrid.info
🌐 ybalrid.info
🐙 ybalrid
in arthurbrainville

Skills

Core	XR runtimes, real-time graphics, matrix algebra for graphics, low-level runtime instrumentation, IPC/runtime design, GPU APIs interoperability
Programming	C++, C#, Rust, Python
Graphics & APIs	Vulkan, Direct3D 11/12, OpenGL, OpenXR, OpenVR
Engines & Platforms	Unity, Godot, SteamVR, Meta Quest
Tools & Libraries	Protobuf, SWIG, MinHook, BepInEx, Harmony, native Win32 and UNIX APIs
Languages	English (professional proficiency), French (native)

Experience

2019–2026 **Software Engineer**, *LIV Inc.*, Remote

- Owned and evolved core mixed reality compositing software used by Twitch streamers, production studios, and to create marketing content for titles on the Meta Quest Store
- Implemented cross-API GPU texture sharing across Direct3D 11/12, OpenGL, and Vulkan
- Built OpenXR API layers and OpenVR hooks to instrument XR applications in real time (output capture, input injection)
- Developed native libraries powering LIV's Unity and Unreal SDKs
- Designed and implemented a high-performance IPC/runtime layer enabling inter-process communication and GPU resource sharing
- Integrated the NVIDIA VFX SDK for ML-based human segmentation, enabling greenscreen-free mixed reality capture
- Extended platform support to Meta Quest 3 passthrough applications
- Prototyped real-time audience interaction systems for Twitch streamers (*LIV Spaces*, *GameChanger*)

2018 **Engineering Intern**, *EON Reality France*, Laval, France

- Integrated Microsoft “Spectator View” into a multi-user mixed reality application
- Ported an internal framework to OpenVR and zSpace stereo displays

2016 **Technical Intern**, Aubay, Boulogne-Billancourt, France

- Contributed to “Drive With Your Hand”, a webcam-based hand gesture control system
- Built an automated testing framework generating diverse hand poses to validate gesture recognition
- Improved thresholding algorithms for robust performance across varied skin tones

Patents

US11769299B1 **Co-inventor** — Pipeline for capturing and streaming interactive applications as volumetric 3D scenes (*Systems and methods for capturing, transporting, and reproducing three-dimensional simulations as interactive volumetric displays*)

Open Source

Kissnet **Author** — Header-only C++17 socket API wrapper. 250+ GitHub stars, 40+ forks. <https://github.com/Ybalrid/kissnet>

OIS **Maintainer** — Object-oriented C++ input system library used in the Ogre3D ecosystem. 270+ stars, 90+ forks. <https://github.com/wgois/OIS>

Ogre_glTF **Author** — glTF 2.0 asset loader plugin for the Ogre 2.1 engine. https://github.com/Ybalrid/Ogre_glTF

OpenXR Runtime Manager **Author** — C# tool to view and switch the active OpenXR runtime on Windows. <https://github.com/Ybalrid/OpenXR-Runtime-Manager>

OpenXR API Layer Template **Author** — Boilerplate and tooling for building OpenXR API layers in C++. Demonstrates deep knowledge of the OpenXR runtime interception stack. <https://github.com/Ybalrid/OpenXR-API-Layer-Template>

Education

2019 **Engineering studies (Virtual Reality major)**, ESIEA, Laval, France

Interests

Film photography & darkroom work, Collecting and fixing old cameras, 3D printing, hobby electronics (microcontroller programming), fixing typewriters and vintage electronics. Fountain pens, stationery. Learning about History and a lot of other things.