# Rohit Ananthakrishnan Lead Graphics Engineer

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## PROFILE SUMMARY

- **Lead Graphics Engineer** with **12 years** in real-time rendering, now leading **6 graphics engineers** on **Meta Quest system rendering** after 6 years on console and PC games at Beenox.
- Writes **C++20**, **GLSL** and **HLSL**, ships on **Vulkan** and **OpenXR** for **Adreno** GPUs, and profiles in **Snapdragon Profiler**, **RenderDoc** and the **OVR Metrics Tool**.
- Strongest in **tile-based mobile GPU performance**, **multiview and foveated rendering** and **render pipeline design** for headsets that have to hold 90 Hz on battery power.
- Works with **Horizon OS**, **display and camera**, **product design** and **Qualcomm** engineers, and speaks for graphics in the quarterly headset performance review.
- Leads **6 engineers**, helped **3** of them reach senior, runs graphics interview loops, and set up the team's **frame budget sign-off** for every release.

## TECHNICAL SKILLS

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| **Programming & Shading Languages:** | C++20, GLSL, HLSL, Slang, Python |
| **Graphics APIs:** | Vulkan, OpenXR, OpenGL ES, DirectX 12, DirectX 11 |
| **Rendering Techniques:** | Multiview rendering, fixed and eye-tracked foveated rendering, forward+ shading, MSAA, render graphs, PBR |
| **GPU Compute & Ray Tracing:** | Compute shaders, tiled light culling, DXR (PC prototypes) |
| **GPU Profilers & Debuggers:** | Snapdragon Profiler, RenderDoc, OVR Metrics Tool, Perfetto, PIX |
| **Engines & Renderers:** | Proprietary system renderer, proprietary game engines, Unity (URP) |
| **Platforms & GPU Hardware:** | Meta Quest 3, Quest 3S, Android (Adreno), PC, Nintendo Switch, PS4, Xbox One |

## EDUCATION

**McGill University** — **M.Sc. in Computer Science (Computer Graphics)** — Montreal, QC · Sep 2012 to Apr 2014

## WORK EXPERIENCE

**Meta** — **Software Engineer, Graphics (Tech Lead)** — Menlo Park, CA · Apr 2020 to Present

- Led the move of the Quest system shell to a **Vulkan** multiview render graph with fixed foveated rendering, which cut GPU time for the home environment on **Quest 3** from 9.8 ms to **6.1 ms** at 90 Hz.
- Set GPU budgets for system UI that draws on top of running apps and added nightly **OVR Metrics Tool** capture runs to CI, so dropped frames in the system overlay fell by **64%** over 2025.
- Worked with **Qualcomm** driver engineers on tile memory load and store settings for the Adreno tile-based GPU, cutting system UI memory bandwidth by **38%** in compositor captures.
- Replaced the shell's uber-shader with **GLSL** variants precompiled to SPIR-V and a pipeline cache shipped with the OS, which cut GPU hitches on first panel open by **87%**.
- Built the HDR tone mapping and color pipeline for passthrough mixed reality with the camera team, matching virtual panels to the real room and cutting color mismatch bugs from 52 to **6** in one release cycle.

**Beenox** — **Senior Graphics Programmer** — Quebec City, QC · Jun 2014 to Mar 2020

- Wrote tiled light culling in compute for the PC version of Call of Duty: Black Ops 4, raising the dynamic light budget in multiplayer maps from 64 to **256** lights at the same GPU cost.
- Prototyped **DXR** ray-traced sun shadows on the PC renderer with a fallback to shadow maps, measuring a **2.8 ms** cost at 1440p on an RTX 2080 to plan future ray tracing support.
- Added GPU LOD selection and Hi-Z occlusion culling for track props in Crash Team Racing Nitro-Fueled, cutting draw calls on **Nintendo Switch** by **41%**.