Ingrid Lindberg Senior Graphics Engineer

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PROFILE SUMMARY

- **Senior Graphics Engineer** with **9 years** on **AAA shooters and open-world games**, owning **shadows, anti-aliasing and GPU budgets** in **Frostbite** and **Snowdrop** for PS5, Xbox Series X|S and PC.
- Writes **HLSL** and **C++20** against **DirectX 12** and the console graphics APIs, profiles in **PIX**, **Razor** and **Nsight Graphics**, and ships PC upscaling with **DLSS**, **FSR** and **XeSS**.
- Strongest in **cached shadow maps**, **temporal anti-aliasing** and **ray-traced GI denoising**, from shipping Battlefield 6 at 60 fps on console and Avatar: Frontiers of Pandora with ray-traced lighting.
- Works with **lighting artists**, **the Frostbite engine team** and **platform engineers at Sony and Microsoft**, and presents the GPU budget at each milestone review.
- Mentors **2 mid-level graphics engineers**, reviews every change to the shadow and post-processing code, and wrote the team's **TAA debugging guide**.

TECHNICAL SKILLS

Programming & Shading Languages:	C++20, HLSL, Python, GLSL
Graphics APIs:	DirectX 12, Vulkan, DirectX 11
Rendering Techniques:	Deferred shading, cascaded and cached shadow maps, TAA, DLSS, FSR, XeSS, HDR10 output
GPU Compute & Ray Tracing:	DXR, ray-traced GI, temporal denoisers, compute shaders, async compute
GPU Profilers & Debuggers:	PIX, Razor, Nsight Graphics, RenderDoc
Engines & Renderers:	Frostbite (FrameGraph), Snowdrop, Unreal Engine 5 (personal projects)
Platforms & GPU Hardware:	PS5, PS5 Pro, Xbox Series X|S, PC

EDUCATION

Linköping University — **M.Sc. in Computer Science (Visual Computing)** — Linköping, Sweden · Aug 2015 to Jun 2017

WORK EXPERIENCE

EA DICE — Senior Graphics Engineer — Stockholm, Sweden · Feb 2024 to Present

- Reworked sun shadows for Battlefield 6 in **Frostbite**, caching the far cascades and refreshing them over several frames, which cut shadow rendering on **PS5** from 3.4 ms to **1.9 ms** on the largest maps.
- Rebuilt TAA history rejection for fast weapon and vehicle motion and tuned it with **DLSS**, **FSR** and **XeSS** on PC, cutting ghosting reports from the open beta by **71%** before launch.
- Owned the GPU budget for the console performance mode, reviewing **Razor** and **PIX** captures of every map each sprint, and brought the worst-case frame on Xbox Series X from 18.9 ms to **16.2 ms**.
- Split the destruction debris shaders into a small set of shared **HLSL** functions and added a nightly permutation report, which shrank the PS5 shader cache from 2.1 GB to **1.3 GB**.
- Moved smoke and dust particle lighting onto async compute in the Frostbite **FrameGraph**, overlapping it with shadow rendering to save **0.9 ms** per frame on PS5.

Massive Entertainment — Graphics Programmer — Malmö, Sweden · Sep 2017 to Jan 2024

- Worked on the ray-traced global illumination denoiser in **Snowdrop** for Avatar: Frontiers of Pandora, adding a temporal reprojection step that cut its cost on Xbox Series X from 2.3 ms to **1.6 ms**.
- Built GPU occlusion culling with indirect draws for Pandora's dense jungle vegetation, which cut foliage draw calls on PS5 by **63%** in the heaviest biomes.
- Fixed descriptor and barrier bugs in the **DirectX 12** back end for The Division 2 on PC, cutting GPU crash reports by **58%** in the first month after launch.