

John Parsaie

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SUMMARY

Graphics engineer with six years demonstrated experience. Equipped with foundational understanding of the rendering equation, modern GPU execution models, and experience collaborating with world-class art teams.

EXPERIENCE

- **Unity Technologies** New York, NY
Senior Graphics Engineer May 2020 - Present
 - **High-Performance Parallel Algorithms:** Author of Unity's dedicated hair software rasterizer for fast rendering of hair strands on modern hardware (PlayStation 5, etc.), with filmic image quality.
 - **Physically-Based Shading:** Author of Unity's physically-based hair shader with advanced multiple scattering.
 - **Architect:** Designed and implemented the HLSL code-gen system for Unity's node-based Visual Effect Graph.
 - **Initiative:** Identified Unity's lack of support for intermediate volumetric formats (OpenVDB), prototype an import pipeline for VDB assets and rendering support for its GPU accelerated counterpart (NanoVDB).
 - **Technical Leadership:** Lead a small team of artists to assemble a high-stakes demo for SIGGRAPH, unveiling the integration of Wētā Barbershop, ZivaRT, and SpeedTree together with the new hair system in Unity.
 - **Strategic Leadership:** Plan a development road-map for state-of-the-art digital character rendering features.
 - **Collaboration:** Work with artists, designers, & QA to deliver production-ready graphics solutions to Unity users.
 - **Independence:** Proficiency in DCC (Houdini FX) allows rapid creation of exotic test data for graphics features.
- **Unity Technologies** Montreal, QC
Graphics Engineer May 2017 - May 2020
 - **Production Experience:** Production-oriented graphics programming work on several real-time short film productions to promote the Unity Engine. Work closely with a diverse cast of lighting artists, character artists, technical artists, riggers, animators, directors, pipeline TDs, producers, show-runners, and fellow programmers.
 - **Production-driven Development:** Implement early iterations of latter-day Unity features such as filmic motion blur, subsurface scattering, hair shading models, cloth shading models; to meet the needs of productions.
 - **Technical Artist:** On more than one occasion play the role of a technical artist on a short film production. IMDB credited as a VFX Technical Director for the 2018 production of Disney's Baymax Dreams.
- **Unity Technologies** Seattle, WA
Software Engineer Intern Summer 2016
- **Warner Bros. Interactive Entertainment** Needham, MA
Software Engineer Intern Summer 2015

PROFICIENCIES

- **Language:** HLSL (SM 6.0), PSSL, C/C++, C# **Debugging:** Razor GPU, RenderDoc, NSight, PIX
- **API:** DirectX12, Vulkan, USD, OpenVDB, Alembic **DCC:** Houdini FX, Unity, Blender, Maya, Unreal

CONTRIBUTIONS & ACHIEVEMENTS

- **SIGGRAPH 2022:** *Speaker, Advances in Real-Time Rendering*
- **Technology and Engineering Emmy Award:** *Recipient*
- **SIGGRAPH 2019:** *Speaker, Unity Sponsored Session*
- **SIGGRAPH 2018:** *Speaker, Real-Time Live*
- **GDC 2018:** *Speaker, Unity Sponsored Session*

EDUCATION

- **Champlain College** Burlington, VT
Bachelor of Science in Game Programming Aug. 2013 – May. 2017