John Hunter

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https://github.com/molive-0 · https://git.stargaze.group/molive

A **senior software developer** based in **Cheltenham**, looking for a role in rendering technologies. A **creative**, **resourceful,** and **adaptable** programmer, experienced working both **individually** and in **Agile teams.**

Industry Experience

Eaton PCS *(Senior Software Developer)*: January 2026 – Present
C++ - Vulkan - Qt - VHDL - Application Development
- Independently designed a custom Wayland compositor with specific needs
- Supported a major project at the DSEI 2025 and DVD 2026 trade shows, under significant pressure and short deadlines
- Used VHDL to develop an FPGA-based 2D fixed-function graphics unit capable of producing 480p60 VGA output inspired by retro computers

Eaton PCS *(Graduate Developer)*: December 2024 – December 2025
C++ - Vulkan - Qt - Application Development
- Designed and implemented a C++ Vulkan system from scratch that allowed playback of low-latency video over a network, with GPU-side video decoding
- Independently designed a testing tool written using Dear Imgui
- Helped design and implement a UI for a major project, written in C++ and Qt, against an open industry specification

Not Just Code *(Software Developer)*: October 2023 – December 2024
C - Embedded Development
- Designed, implemented and subsequently demonstrated the software stack for a Bluetooth / UWB device as the sole developer on a contracted piece of work

Projects and Technical Portfolio

(See https://mo.molive.live/ for a full list)

bevy-tape-drive: September 2026 – Present
Rust - WGSL - Vulkan - Graphics
- Integration of Tape Drive (see below) into Bevy's Solari realtime pathtracer
- Implicit surfaces are present in the AS and traced using hardware rays
- Surfaces realistically contribute to GI and reflections across the scene
- Code is available at git.stargaze.group

Tape Drive: December 2024 – Present
Rust - GLSL - Vulkan - Graphics
- Developed proof-of-concept implementation of JIT compiling GPU shaders to SPIR-V for the purpose of rendering implicit surfaces
- Renders at hundreds of frames per second, even on iGPUs.
- Works on both Windows and Linux
- Code is available at git.stargaze.group

Dissertation Project: December 2022 – April 2023
Rust - GLSL - Vulkan - Graphics
- Presented a novel technique of using mesh shaders for rendering implicit surfaces, based on the work of Matt Keeter
- Developed proof-of-concept implementation to test this novel technique

ST-NICCC 2000 Ports: Various
C - Assembly - Graphics
- Ported a polygonal animation to Scratch, SNES and Raspberry Pi Pico platforms, including writing a custom low-level n-gon filler for the latter two
- Raspberry Pi Pico port came third place in a competition at Revision demoparty

Education

University of Southampton: 2020 – 2023
BSc Computer Science, First Class Honours
- Modules included Game Design and Development, Advanced Computer Architecture, and Real-time Computing and Embedded Systems

Other Work

Demoscene: 2017 – Present
- Member of the Demoscene, a subculture centred around creating audio-visual presentations for old and new computers (view full demoscene portfolio here)
- Member of the demogroup Stargaze

Interests

- Implicit Surfaces
- Mesh Shaders
- Hardware Raytracing
- Real-Time Rendering
- Retro Programming
- Sound design

Proficient Languages

- Rust
- C++
- C
- GLSL
- WGSL

Additional Languages

- VHDL
- C#
- Python
- Java

Skills

- Vulkan
- Qt
- Dear Imgui
- Git
- Agile
- Linux

References Available on Request