John Hunter BSc

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A **first-class graduate** from the **University of Southampton**, looking for a role in Rendering Technologies. A **creative, resourceful, and adaptable programmer**, experienced with both **independent** and **AGILE group** work.

Education

University of Southampton: 2020 - 2023
BSc Computer Science, First Class Honours
Modules include Game Design and Development, Advanced Computer Architecture, Advanced Computer Networks, Real-time Computing and Embedded Systems, Programming II, and Software Engineering Group Projects

Cirencester College: 2018 - 2020
A*AA Maths, Further Maths, and Computer Science at A-level
Distinction* in Music Production Subsidiary BTEC

Industry Experience

Ultra PCS *(Grad. Software Developer)*: December 2024 – Present
C++ - Vulkan - Qt - VHDL - Application Development
- Designed and implemented a Vulkan system for a project that allowed playback of low latency video over a network, with GPU side video decoding
- Helped design and implement a UI for the project, written in C++ and Qt, against an open industry specification
- Supported said project at the DSEI expo
- Also worked with FPGAs and VHDL

Not Just Code *(Software Developer)*: October 2023 – December 2024
C - Embedded Development
- Worked with bluetooth and ultra wide band
- Presented a demonstration to the client

Not Just Code *(Software Developer)*: June 2019, June 2021
Python - Django - Website Development
- Developed Websites for the company's clients
- Helped improve online presence for various companies

Projects and Technical Portfolio

Tape Drive: December 2024 – Present
Rust - GLSL - Vulkan - Graphics
- Developed proof-of-concept implementation of JIT compiling GPU shaders for the purpose of rendering implicit surfaces
- Code is open source and 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
- Developed proof-of-concept implementation to test this novel technique

ST-NICCC 2000 Ports: Various
- 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

BasicTracker: March 2020
- Coded a full music authoring program to be used from the terminal in C#

Extra Curricular

Southampton University Stage Technician's Society (StageSoc): 2020 – 23
- Worked in a team to help put on plays and musicals in a student theatre
- Designed a surround sound seascape, including foley and speaker setup
- Created a network of analogue video cameras and monitors for a 13-piece band to play in sync from 4 different locations around the theatre, plus allowing a stage manager to safely handle pyrotechnics

Demoscene: 2016 – Present
- Member of the Demoscene, a subculture centred around creating audio-visual presentations for old and new computers (view portfolio here)
- Member of the demogroup Stargaze

Interests

- Implicit Surfaces
- Mesh Shaders
- GPU Based Raytracing (RTX)
- Real-Time Rendering
- Retro Programming
- Sound design

Languages

- Rust
- C++
- C
- VHDL
- GLSL
- C#
- Python
- Java

Skills

- Vulkan
- Qt
- Git
- AGILE
- Linux

References Available on Request