

Conor Lavelle

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WORK EXPERIENCE

Software Engineer 2 – Microsoft

May 2018 – Present

- Working in the group responsible for DirectX graphics on the Graphics Interfaces team
- Focusing on Windows' C++ software rasterizer, WARP; added support for new features like Variable Rate Shading and implemented significant optimizations such as shader cache lock improvements and support for native code generation in emulated contexts
- Maintaining a PowerShell/Python automated testing infrastructure; added improvements such as virtual machine support which improved stability across frequent OS upgrades and load balance capability that improved test coverage and reduced total testing duration
- Implemented Windows Settings support for Auto HDR in C++ and XAML
- Working on a cross-team group focused on improving internal documentation and supporting content writers working on public facing documentation

Graphics Software Engineer Intern – NVIDIA

Jan 2018 – April 2018

- Worked with the Real-Time Rendering Research team on their open-source C++ rendering framework, Falcor (<https://github.com/NVIDIAGameWorks/Falcor>)
- Expanded testing framework to support multiple machines and operating systems
- Worked to integrate NVIDIA GameWorks' ShadowLib into Falcor

Teaching Assistant: CS460 – DigiPen Institute of Technology

Sep 2017 – Dec 2017

- Worked as a teaching assistant for CS460/560: Advanced Animation and Modeling
- Helped students with and graded C++ projects including hierarchical animation, motion along a path, inverse kinematics, and physically based animation

Software Engineer Intern – Microsoft

May 2017 – Aug 2017

- Worked with the Enterprise Platforms and Corporate Services Integration team on a Python tool that analyzes Azure Logic Apps to determine their Azure usage

Graphics Software Engineer Intern – NVIDIA

Dec 2016 – May 2017

- Worked with the Real-Time Rendering Research team on the Falcor framework
- Created an automated testing framework for Falcor in python that supports both unit and image comparison tests that run daily and email results to team members
- Added a GPU-based particle system to Falcor, and updated cascaded shadow map and post processing samples

EDUCATION

DigiPen Institute of Technology

Aug 2014 – April 2018

- *BS in Computer Science and Simulation, Minor in Mathematics*

SELECTED STUDENT PROJECTS

Feral – Graphics Programmer

May 2016 – Apr 2017

3D Brawler – Custom Component-Based C++ Engine (6 Programmers, 2 Designers, 3 Artists)

- Implemented a C++ 3D graphics engine using DirectX 11 that included skeletal animation, deferred Blinn shading, shader reflection, GPU-based particles, and glow
- Created a tool using Maya's FBX SDK that converts FBX files to a custom file format
- Wrote a Maya exporter GUI in Python that automates FBX conversion and enables team artists to quickly and easily see their assets in the game's graphics engine

Pogo Pug – Graphics Programmer

Jan 2016 – Apr 2016

2D Platformer – Custom Component-Based C++ Engine (4 Programmers, 2 Designers, 1 Artist)

- Refactored an existing graphics engine to use the OpenGL programmable pipeline
- Designed and implemented a fast and flexible particle system that was used for a variety of different effects in the game

SKILLS

Languages

C++
C#
Python
PowerShell
HLSL/GLSL
XAML
Rust (Familiar)

API

DirectX 11
DirectX 12 (Familiar)
OpenGL 4.5
SDL 2.0
ImGui
Anaconda (Familiar)
Windows (Familiar)

Dev Tools

Visual Studio
Windbg
Hyper-V
Pix
Render Doc
GPUView
Maya 2015
Unity
Doxygen
Premake (Familiar)

Math Skills

Linear Algebra
3D Math
Discrete Math

OS

Windows
Ubuntu (Familiar)
Linux Mint (Familiar)

Collaboration

Git
Perforce