Colden Patrick Cullen

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.experience

[0] Google: GCE Virtual Networking (December 2019 - Current)

- Designed and built a C library used in drivers for Windows, Linux, FreeBSD, Data Plane Development Kit (DPDK), and VMware's ESXi hypervisor to reduce maintenance overhead and duplicated code.
- Increased stability of the Windows NDIS driver for Compute Engine's Virtual NIC.
- Enabled developers to run virtual machines locally and reduce driver iteration time by implementing gVNIC queue servicers for Linux tun/tap interfaces.

[1] Amazon Web Services: SDKs & Tools (May 2018 - December 2019)

- Reduced maintenance burden for AWS IoT SDKs by writing a unified MQTT client in C and binding it to Python and Node.js.
- Implemented a streaming decoder for the HTTP/2 protocol in C used across the AWS CLI and the 9 supported programming language SDKs.
- Improved code stability, coverage, and health by building a presubmit testing infrastructure for C libraries and their Python, Java, NodeJS, and C++ bindings.

[2] Amazon Games: Lumberyard (February 2015 - May 2018)

- Promoted modularity and code & asset sharing by implementing a plugin system. This system was used by various teams to add optional features and third party integrations, such as PhysX, EMotionFX, Twitch, and AWS.
- Simplified Lua script bindings in the engine, which exposed more functionality for designers and gameplay programmers. Script Canvas, a visual scripting system, was later built using this binding system.
- Decreased call overhead by up to 90% between gameplay components and core engine systems in the EBus multicast messaging system.
- Added support to build the engine and game projects with Clang for Windows, which resulted in ~2x better framerates in debug builds. Submitted 5 patches to LLVM projects to fix Windows-specific bugs.
- Consolidated first time user experience by writing a project management library, which standardized installation tasks based on configuration files across game teams.

[3] Amazon Games (Intern): Lumberyard (Summer 2014)

- Demonstrated the capabilities of a distributed game server technology by building a sample game. This project was shown by the server team during executive pitches.

.education

[0] Rochester Institute of Technology, BSc in Game Design & Development (December 2014)

[1] Carnegie Mellon University, National High School Game Academy (Summer 2011)