

# Jake Leonard

Online, Network & Multiplayer Engineer

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Seattle, WA

## EXPERIENCE

### Principal Unreal Engineer

Sony | 2021-2024

Principal in development of a synchronized immersive media experiences framework for high amounts of concurrent users. Shaped the dynamic content system to allow for real-time deployment at scale; including the development of a custom designed file system that improving static load times of dynamic content and lowered memory. Streamlined numerous code and gameplay elements to be robust and flexible as new designs were architected.

In charge of handling network data routing, replication and optimization. Instrumental in developing custom network replicators to minimize processing overhead.

Guided the studio in adopting more effective and performant Unreal practices across all development houses. Rapidly solved incidents and significant in keeping product downtime to a handful of minutes.

Built libraries for teams to handle secure, resilient & scalable user data processing/storage other gaming platforms. In charge of researching and evaluating tools for upcoming technologies.

### Online/Network Engineer

Singularity 6 | 2020-2021

Major expert of Unreal at Singularity 6. Tasked with bringing their first title, Palia, to performant, efficient standards. Leading the studio towards more effective and performant network multiplayer routines, while building the foundation of a solid core replication system that can provide for the desires and goals of the design and gameplay teams moving forward. Educated fellow coworkers on better network practices and empowered teammates to create an optimal massively multiplayer game.

Designed and built a custom live patcher for an Unreal Engine 4 game, in addition to improving build systems with new custom tooling, speeding up build turnaround. Strong focus on keeping fellow developers working smoothly.

### Network Engineer

Epic Games | 2017-2020

Spearheaded current low-level network refactor, improving network connections and flow on every platform Unreal Engine 4 ships on. Refactored several components of UE4 for functional uniformity. Pushed the engine to be platform/protocol agnostic while still heavily focusing on ease of usage. Current maintainer of Steamworks on UE4, breathing new life into the platform with new Steam features, network improvements and fixing legacy issues. Provided development support for a multitude of partners as well.

## PROGRAMMING LANGUAGES

C++



Python



C#



Javascript



PHP



## SKILLS

Network Programming



API Design & Development



Unreal Development



Console Programming



Debugging



Mentoring



Tools Authoring



Was a part of the team that implemented replay functionality in Fortnite which was showcased at GDC 2018 and is now available as a part of the engine. Also wrote and designed the netcode for splitscreen communications in an massively multiplayer server environment, powering a feature that has increased player drive and interaction within Fortnite.

## ● **Online Engineer**

Hardsuit Labs | 2015-2018

The force behind shipping plenty of online titles on PlayStation 4 and Xbox One, including a couple MMOs. All delivered and released on time, with strong launch days. Contributed to advancing our understandings of technology as a studio, in addition to serving as an adviser to tech firms on their upcoming network advancements. Working with our partners at Sony, we were able to trace down a critical issue in the PlayStation 4 that affected dozens of titles. Strengthened Unreal Engine 3 on next-gen platforms, which can be seen in over a hundred PS4 titles on the market to date. I've implemented everything from voice, to entitlements, to custom matchmaking (both platform provided and homegrown), to friends management, all the way down to the core socket communications on clients. And that's not without mentioning server work as well, handling assignment and load balancing, to cross process communication and more.

## ● **Associate Online Engineer**

High Moon Studios | 2014-2015

Implemented numerous online fixes for the AAA title, Call of Duty: Advanced Warfare for the Playstation and Xbox platforms. Collaborated with remote teams in pushing new features and bugfixes for the product. Debugged various platform specific issues, in addition to strengthening the game to comply with third party TCRs. Optimized data manipulation and introduced item validation between console families. Fine-tuned communication with third and first party services used in the game, to provide a smooth experience on both consoles.

Additionally, led a side project dealing with combating the growing issue of cheating on the PS3, where I reverse-engineered exploits and provided ways to mitigate the hacking attempts.

## ● **Network Programming Teaching Assistant**

Digipen Institute of Technology | 2012-2014

Wrote automation tools, tutored and graded students on their usage of creating networked applications and games using WinSock. Authored a toolchain that used DLL Injection techniques to grade the student based on execution flow and tested various pitfalls that occur in real world scenarios.

## ● **Engineer**

Self-Employed Contractor | 2004-2014

Worked with numerous start up companies to help them advance their brand via tools and products that connected clients to their services by making technology accessible.