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Level Up Your Game: OS Kernel and Game Interactions revealed with Perfetto

Perfetto is a powerful instrumentation-based tool that enables deep insights into the behavior of computing platforms. In this talk, we'll demonstrate how Perfetto can be leveraged to analyze the performance of mobile and VR games, focusing on their interactions with the Linux kernel.

We'll present real-world examples illustrating how Perfetto helps us understand the complex relationships between the kernel scheduler, memory management, GPU drivers, interrupt handlers, and game workloads. Since games are semi-realtime applications, they must complete all processing within strict frame time budgets. The kernel scheduler, in particular, plays a pivotal role in ensuring games meet their frame scheduling deadlines.

By examining Perfetto traces, we'll showcase key metrics that reveal performance bottlenecks and highlight opportunities for optimization. These insights are invaluable for improving game performance on Linux and Android platforms, ultimately leading to smoother and more responsive gaming experiences.

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