Abstract
Dynamic compilation is receiving growing interest from computer architects, compiler writers and software developers alike. Dynamic compilation systems provide a much needed solution to various problems ranging from transparent software migration to the efficient implementation of novel mobile programming languages. The appeal of dynamic compilation lies in the ability to alter an executing program binary. While under the control of a dynamic compiler, running program binaries can be adapted continuously and transiently to the actual runtime program behavior and the current architectural environment. Dynamic compilation promises many improvements from simple performance optimization to revolutionizing the way we design architectures and the way we develop and distribute software. Yet, the current state of affairs is still far behind this vision leaving grounds for skepticism. This talk will discuss the many challenges and promises of dynamic compilation and will point to some of the steps that are needed to propel its next advances.

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