A Few Applications of Event Stream Processing

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Abstract

Runtime verification is the process of observing a sequence of events generated by a running system and comparing it to some formal specification for potential violations. We show how the use of the BeepBeep event stream processor can greatly speed up the testing phase of a video game under development, by automating the detection of bugs when the game is being played. This process generalizes to a wide number of other use cases, including web application debugging and network intrusion detection.

Biography

Sylvain Hallé, Ph.D., is the Canada Research Chair in Specification, Testing and Verification of Software Systems at Université du Québec à Chicoutimi, Canada, where he has been working since 2010. He obtained a Ph.D. in Computer Science from Université du Québec à Montréal (UQAM) and has worked as a postdoctoral research fellow at University of California, Santa Barbara, from 2008 to 2010. Pr. Hallé has received numerous international awards for his research on software testing and verification, and earned two Governor General of Canada’s Academic Medals, in 1997 and 2009. He is also an IEEE Senior Member since 2014. In 2012, Pr. Hallé has co-founded, and is the current head of the Laboratoire d'informatique formelle (LIF), a research lab devoted to the development of new techniques to discover or prevent bugs in computer systems.