

Einladung

zum Informatik-Kolloquium des
AB Programmiersprachen und Übersetzer am
Freitag, den 20. Februar 2015, um 11:00 Uhr s.t.
in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte)

Es spricht

Prof. Dr. Michael Franz

University of California, Irvine, CA, USA

über

Software Defenses Inspired by Biodiversity

Today's software monoculture creates asymmetric threats. An attacker needs to find only one way in, while defenders need to guard a lot of ground. Adversaries can fully debug and perfect their attacks on their own computers, exactly replicating the environment that they will later be targeting. Software diversity raises the bar to attackers. A diversification engine automatically generates a large number of different versions of the same program, potentially one unique version for every computer. These all behave in exactly the same way from the perspective of the end-user, but they implement their functionality in subtly different ways. As a result, a specific attack will succeed on only a small fraction of targets and a large number of different attack vectors would be needed to take over a significant percentage of them. Because an attacker has no way of knowing a priori which specific attack will succeed on which specific target, this method also very significantly increases the cost of attacks directed at specific targets. We have built such a diversification engine which is now available as a prototype. We can diversify large software distributions such as the Firefox and Chromium web browsers or a complete Linux distribution. Some preliminary insights will be presented as well as some practical issues, such as the problem of reporting errors when every binary is unique.

Biographie: Michael Franz is the director of the Secure Systems and Software Laboratory at the University of California, Irvine (UCI). He is a Full Professor of Computer Science in UCI's Donald Bren School of Information and Computer Sciences and a Full Professor of Electrical Engineering and Computer Science (by courtesy) in UCI's Henry Samueli School of Engineering. Prof. Franz was an early pioneer in the areas of mobile code and dynamic compilation. He created an early just-in-time compilation system, contributed to the theory and practice of continuous compilation and optimization, and co-invented the trace compilation technology that eventually became the JavaScript engine in Mozilla's Firefox browser. Franz received a Dr. sc. d techn. degree in Computer Science (advisor: Niklaus Wirth) and a Dipl. Informatik-Ing. ETH degree, both from the Swiss Federal Institute of Technology, ETH Zurich. (<http://www.michaelfranz.com/>)

Zu diesem Vortrag lädt der *Arbeitsbereich für Programmiersprachen und Übersetzer am Institut für Computersprachen* herzlich ein.

Tee: 10:30 Uhr in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte).