
Let the Cat out of the Bag: Exploiting the Internet of Things through Advanced Security Analysis

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ABSTRACT

Internet of Things (IoT) is having an exponential growth in a multitude of applications. However, the security of IoT has been always neglected, leading to large-scale attacks on IoT devices. The heterogeneous nature of IoT devices exposes them to diverse attack vectors and attacks on critical infrastructure, causing alarm for all stakeholders involved. Recent large-scale attacks such as Mirai demonstrate the gravity of these threats faced, along with increasing novel methods of exploiting vulnerabilities. In order to address the issues of IoT security, dedicated security analysis techniques are necessary. This talk will focus on showing how vulnerable the IoT devices are and discuss some of the security analysis techniques such as penetration testing, static analysis, fuzzing etc. which is achieved through the advanced automatic IoT security testbed.

SPEAKER BIOGRAPHY

Vinay has been researching in Cyber Security focusing on Internet of Things (IoT) and have been developing various techniques on how to expose the IoT devices by finding known and unknown vulnerabilities. Apart from security, Vinay has also been researching privacy issues related to IoT. He has been also focusing on Cyber-Physical Systems and researching on creating anomaly detection techniques. His past research has focused on Quality of Information in Wireless Sensor Networks (WSNs). He has been focusing on building various sampling and transport protocols in WSNs. Vinay obtained his master from University of Trento, Italy in 2008 and his PhD from Technical University of Darmstadt, Germany in 2014. Currently, he is a research scientist at iTrust, Singapore University of Technology and Design. Vinay has also served as the technical committee member for various IEEE and ACM conferences. His interest also lies in entrepreneurship and have been working on a few start-ups.