1. Detecting hardware Trojans: A tale of two techniques

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Abstract: Summary form only given. Integrated Circuits (ICs) are designed and fabricated in a globalized multi-vendor environment making them vulnerable to malicious design changes and the insertion of hardware Trojans/malware. In this talk I will cover two distinct techniques to address the problem of detecting hardware Trojans. The first uses SAT and BDD-based functional analysis to reverse engineer ICs. The goal here is to derive the higher-level function of IC through algorithmic analysis of its netlist to help expose the Trojan logic. The second uses statistical analysis of chip simulation data in a clustering algorithm to isolate the Trojan logic. I will discuss these techniques, their practical application on benchmark circuits and their complementary strengths. This is joint work with Burcin Cakir and Pramod Subramanyan.

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