Engineering Village™

1. Tutorial T4: All You Need to Know about Hardware Trojans and Counterfeit ICs

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Authors: Tehranipoor, M. (1); Forte, D. (1)
Author affiliation: (1) Univ. of Connecticut, Storrs, CT, United States
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Abstract: The migration from a vertical to horizontal business model has made it easier to introduce hardware Trojans and counterfeit electronic parts into the electronic component supply chain. Hardware Trojans are malicious modifications made to original IC designs that reduce system integrity (change functionality, leak private data, etc.). Counterfeit parts are often below specification and/or of substandard quality. The existence of Trojans and counterfeit parts creates risks for the life-critical systems and infrastructures that incorporate them including automotive, aerospace, military, and medical systems. In this tutorial, we will cover: (i) Background and motivation for hardware Trojan and counterfeit prevention/detection; (ii) Taxonomies related to both topics; (iii) Existing solutions; (iv) Open challenges; (v) New and unified solutions to address these challenges.
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