Hardware security, Intelectual property piracy and Obfuscation

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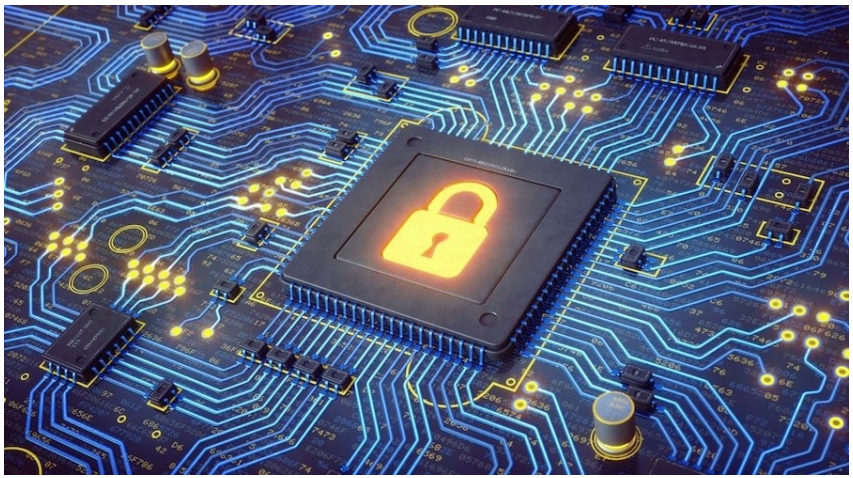
Hardware security

Hardware Security
is vulnerability protection that comes in the form of a physical device rather than software that's installed on the hardware of a computer system.



Intellectual property piracy

Intellectual property piracy

occurs when someone copies, reproduces, oruses these protected works without the permission of the rightful owner, often with the intent to profit or benefit from the original creator's ideas or artistic expressions.

Obfuscation

Obfuscation is the obscuring of the intended meaning of communication by making the message difficult to understand, usually with confusing and ambiguous language.

Problem

Code after most obfuscation methods becomes more dependent on the platform or compiler, Insufficient security of obfuscation. So there are better methods...

Obfuscation methods

- **Reverse engineering method** – converting machine code into the programming language and examining the latter for vulnerabilities.
- **Byte level manipulation**
- **Cryptography**
- **Finite State Machine Method, which are studied in universities**

Comparison of different versions

Table: Average Number of Failing Patterns for ISCAS-89 Benchmark Circuits for Different Modification Schemes

Benchmark	Scheme-1	Scheme-2	Scheme-3
S298	51	158	193
S344	215	1093	1233
S444	197	569	7732
S526	146	485	1186
S641	598	2491	5135
S713	913	2918	3301

Conclusions

Insufficient security of obfuscation is the main identified drawback, which can be prevented by combining various obfuscation techniques and the encryption method