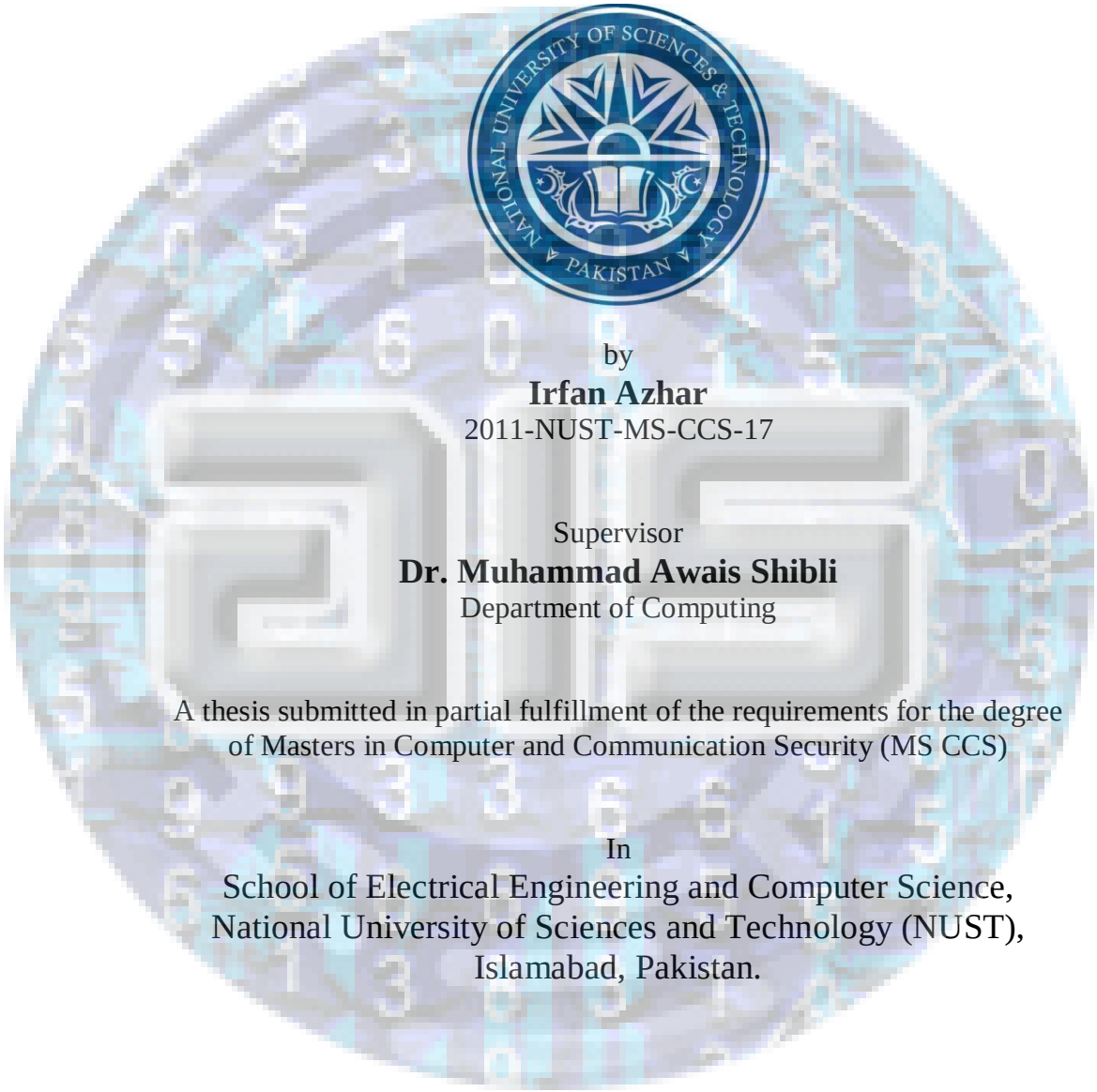
KEEPING KEYS SECRET IN PHYSICALLY ACCESSIBLE HOSTS



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Abstract

Security of secret keys stored on a user's machine is not assured and such an endeavour is indeed a daunting task. Careless handling of keys on physical y accessible hardware could easily mean loss of crypto material to unauthorized access. If an attacker can achieve access to a binary code, then well-known key-finding techniques and tools come handy to extract and compromise the key material. This thesis proposes and demonstrates a new technique for securing keys in storage and in software. In that, randomly generated bit-strings of a crypto key are 'transformed' into a set of randomized functions. This set is compiled and obfuscated to form part of a security critical application. Inverse transform is calculated dynamically to retrieve and use original bit-strings of the embedded key. It is demonstrated here that new methodology is effective against entropy based disc-surfing tools that scan host's memory devices/entities.