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A comprehensive study of document security system, open issues and challenges

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Abstract
The privacy and security of identity documents like Passports, PAN cards, Driving License as well as other important personal documents like academic degree certificates are now at an all-time high, given how easy and cheap the new technologies make it to produce forged documents which not just carry threat to an individual's respect in society or career aspirations but can also prove to be life threatening if they are placed in the wrong hands. Thus, it is very important to have mechanisms that prevent or rather make it computationally unfeasible to forge these important documents. In this paper, we present an extensive review of techniques aimed at making tamper resistant physical documents, published across last two decades. We provide an in-depth classification of the means used for securing documents in the existing literature, discuss their limitations, open areas and future insights to address the open issues and challenges.

Keywords Physical document security · Anti-counterfeiting · Impersonation · Privacy · Biometrics · RFID · QR codes

1 Introduction

Physical documents in one's life can range from identity documents (ID) such as Local and National Identification Cards, Residence Certificate, Employee ID's, birth and death certificates, Driving Licenses, Military Identification certificate as well as a person's academic records. These documents are used for authenticating an individual's' identity and credentials in a variety of applications. Erstwhile to computers and more so internet, all documents were issued and processed manually. However, since computers have taken over, resulted in automation of printing which is responsible for creation of these

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