Authentication of Physical Objects with Dot-Based 2D Code

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Abstract : Counterfeit goods and documents are a global problem, which needs more and more sophisticated methods of resolving it. Existing techniques using watermarking or embedding symbols on objects are not suitable for all use cases. To address those special needs, we created complete system allowing authentication of paper documents and physical objects with flat surface. Objects are marked using orientation independent and resistant to camera noise 2D graphic codes, named DotAuth. Based on the identifier stored in 2D code, the system is able to perform basic authentication and allows to conduct more sophisticated analysis methods, e.g., relying on augmented reality and physical properties of the object. In this paper, we present the complete architecture, algorithms and applications of the proposed system. Results of the features comparison of the proposed solution and other products are presented as well, pointing to the existence of many advantages that increase usability and efficiency in the means of protecting physical objects.

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