



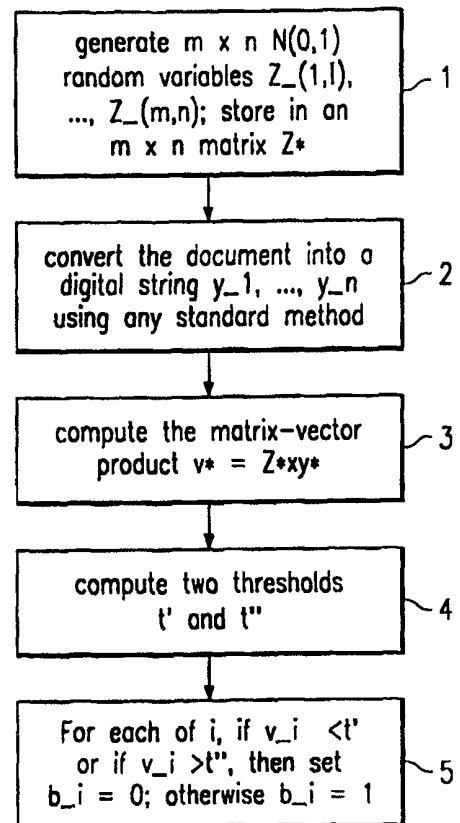
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/US99/16515 (22) International Filing Date: 19 July 1999 (19.07.99) (30) Priority Data: 09/120,023 17 July 1998 (17.07.98) US (71)(72) Applicant and Inventor: LEIGHTON, F., Thomson [US/US]; 15 Charlesden Park, Newtonville, MA 02160 (US). (74) Agent: JUDSON, David, H.; Hughes & Luce, L.L.P., Suite 2800, 1717 Main Street, Dallas, TX 75210 (US).</p>		<p>(81) Designated States: AU, CA, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> (88) Date of publication of the international search report: 20 April 2000 (20.04.00)</p>

(54) Title: METHOD FOR IMAGE PROCESSING TO FACILITATE COPY PROTECTION

(57) Abstract

A method for mapping a work (e.g., a picture, a document or the like) comprising a large number of bytes into a relatively small bit string (2) to facilitate copy protection. The technique creates a first string (2) from the work with the property that if one modifies the work by some given degree (e.g., through intentional variation or perhaps merely through aging), a second string (3) (generated by the inventive technique) and associated with the modified work is not meaningfully distinct from the first string (2). When applied through the algorithm, works that are similar result in the same or similar strings (5). As a result, an owner of the content sought to be protected may apply the algorithm to copies of the work or copy protection purposes.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/16515

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(6) : G06K 9/00
 US CL : 382/100
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 382/100, 232; 713/176-179

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,587,984 A (OWA et al) 24 December 1996, see abstract.	1
A, P	US 5,915,027 A (COX et al) 22 June 1999, see abstract.	1
A, P	US 5,875,249 A (MINTZER et al.) 23 February 1999, see abstract.	1
A	DELAIGLE et al. A Psychovisual Approach for Digital Picture Watermarking. Journal of Electronic Imaging. July 1998. Vol.7. No.3. see sections 4.1 and 4.2.	1

Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search 14 JANUARY 2000	Date of mailing of the international search report 17 FEB 2000
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/16515

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	COX et al. Secure, Imperceptable Yet Perceptually Salient, Spread Spectrum Watermark for Multimedia. Proceedings of the 1996 IEEE Southcon Conference. June 1996. see entire reference.	1