

References

- Ahmed, F. and Siyal, M. Y., "A secure and robust wavelet-based hashing scheme for image authentication", in "International Conference on Multimedia Modeling", pp. 51–62, Springer 2007
- Alattar, A. M., Levy, K. L., Stager, R. R., Rhoads, G. B., and Ellingson, E. E., "Digital watermarking and fingerprinting including synchronization, layering, version control, and compressed embedding", US Patent 7,020,304 Mar 28 2006
- Alcantarilla, P. F., Bartoli, A., and Davison, A. J., "KAZE features", in "European Conference on Computer Vision", pp. 214–227, Springer 2012
- Amirgholipour, S. K. and Naghsh-Nilchi, A. R., "Robust digital image watermarking based on joint DWT-DCT", *International Journal of Digital Content Technology and its Applications*, vol. 3, no. 2, 42–54 2009
- Andrews, H. and Patterson, C., "Singular value decompositions and digital image processing", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. 24, no. 1, 26–53 1976
- Arnold, M. K., Schmucker, M., and Wolthusen, S. D., *Techniques and applications of digital watermarking and content protection*, Artech House 2003
- Arnol'd, V. I. and Avez, A., "Ergodic problems of classical mechanics", 1968
- Barni, M., Bartolini, F., and Piva, A., "Improved wavelet-based watermarking through pixel-wise masking", *IEEE transactions on image processing*, vol. 10, no. 5, 783–791 2001
- Bas, P. and Furon, T., "A new measure of watermarking security: The effective key length", *IEEE Transactions on Information Forensics and Security*, vol. 8, no. 8, 1306–1317 2013
- Bender, W., Gruhl, D., Morimoto, N., and Lu, A., "Techniques for data hiding", *IBM systems journal*, vol. 35, no. 3.4, 313–336 1996
- Bhatnagar, G., Wu, Q. J., and Liu, Z., "A new contrast based multimodal medical image fusion framework", *Neurocomputing*, vol. 157, 143–152 2015
- Blahut, R., *Theory and Practice of Error Control Codes*, Addison-Wesley 1983
- Boneh, D. and Franklin, M., "Identity-based encryption from the Weil pairing", in "Annual international cryptology conference", pp. 213–229, Springer 2001
- Brunelli, R. and Mich, O., "Histograms analysis for image retrieval", *Pattern Recognition*, vol. 34, no. 8, 1625–1637 2001
- Cao, W., Zhou, Y., Chen, C. P., and Xia, L., "Medical image encryption using edge maps", *Signal Processing*, vol. 132, 96–109 2017
- Chen, B. and Chandran, V., "Biometric based cryptographic key generation from faces", in "9th Biennial Conference of the Australian Pattern Recognition Society on Digital Image Computing Techniques and Applications (DICTA 2007)", pp. 394–401, IEEE 2007
- Chen, S.-T., Huang, H.-N., Kung, W.-M., and Hsu, C.-Y., "Optimization-based image watermarking with integrated quantization embedding in the wavelet-domain", *Multimedia Tools and Applications*, vol. 75, no. 10, 5493–5511 2016
- Chen, X. and Hu, C.-J., "Adaptive medical image encryption algorithm based on multiple chaotic mapping", *Saudi journal of biological sciences*, vol. 24, no. 8, 1821–1827 2017
- Choi, H., Choi, K., and Kim, J., "Fingerprint matching incorporating ridge features with minutiae", *IEEE Transactions on Information Forensics and Security*, vol. 6, no. 2, 338–345 2011
- Chouhan, R., Jha, R. K., Chaturvedi, A., Yamasaki, T., and Aizawa, K., "Robust watermark extraction using SVD-based dynamic stochastic resonance", in "2011 18th IEEE International Conference on Image Processing", pp. 2745–2748, IEEE 2011
- Chuang, T.-J. and Lin, J.-C., "A new multiresolution approach to still image encryption", *Pattern*

- Recognition and Image Analysis (Advances in Mathematical Theory and Applications)*, vol. 9, no. 3, 431–436 1999
- Coppersmith, D., “The Data Encryption Standard (DES) and its strength against attacks”, *IBM journal of research and development*, vol. 38, no. 3, 243–250 1994
- Cox, I. J. and Miller, M. L., “The first 50 years of electronic watermarking”, *EURASIP Journal on Advances in Signal Processing*, vol. 2002, no. 2, 820936 2002
- Cox, I. J., Kilian, J., Leighton, F. T., and Shamoon, T., “Secure spread spectrum watermarking for multimedia”, *IEEE transactions on image processing*, vol. 6, no. 12, 1673–1687 1997
- Cox, I. J., Miller, M. L., and Bloom, J. A., “Watermarking applications and their properties”, in “Proceedings International Conference on Information Technology: Coding and Computing (Cat. No. PR00540)”, pp. 6–10, IEEE 2000
- Cox, I. J., Miller, M. L., Bloom, J. A., and Honsinger, C., *Digital watermarking*, vol. 53, Springer 2002
- Craver, S., Memon, N., Yeo, B.-L., and Yeung, M. M., “Resolving rightful ownerships with invisible watermarking techniques: limitations, attacks, and implications”, *IEEE Journal on selected Areas in communications*, vol. 16, no. 4, 573–586 1998
- Daemen, J. and Rijmen, V., *The design of Rijndael: AES-the advanced encryption standard*, Springer Science & Business Media 2013
- Dagadu, J. C. and Li, J., “Context-based watermarking cum chaotic encryption for medical images in telemedicine applications”, *Multimedia Tools and Applications*, vol. 77, no. 18, 24289–24312 2018
- Dang, P. P. and Chau, P. M., “Image encryption for secure internet multimedia applications”, *IEEE Transactions on consumer electronics*, vol. 46, no. 3, 395–403 2000
- Daren, H., Jiufen, L., Jiwu, H., and Hongmei, L., “A DWT-based image watermarking algorithm”, in “null”, p. 80, IEEE 2001
- De Roover, C., De Vleeschouwer, C., Lefèbvre, F., and Macq, B., “Robust image hashing based on radial variance of pixels”, in “IEEE International Conference on Image Processing 2005”, vol. 3, pp. III–77, IEEE 2005
- De Strycker, L., Termont, P., Vandewege, J., Haitsma, J., Kalker, A., Maes, M., and Depovere, G., “Implementation of a real-time digital watermarking process for broadcast monitoring on a TriMedia VLIW processor”, *IEE Proceedings-Vision, Image and Signal Processing*, vol. 147, no. 4, 371–376 2000
- Depovere, G., Kalker, T., Haitsma, J., Maes, M., De Strycker, L., Termont, P., Vandewege, J., Langell, A., Alm, C., Norman, P. *et al.*, “The VIVA project: digital watermarking for broadcast monitoring”, in “Proceedings 1999 International Conference on Image Processing (Cat. 99CH36348)”, vol. 2, pp. 202–205, IEEE 1999
- Di Martino, F. and Sessa, S., “Fragile watermarking tamper detection via bilinear fuzzy relation equations”, *Journal of Ambient Intelligence and Humanized Computing*, pp. 1–21 2018
- Dzwonkowski, M., Papaj, M., and Rykaczewski, R., “A new quaternion-based encryption method for DICOM images”, *IEEE Transactions on Image Processing*, vol. 24, no. 11, 4614–4622 2015
- Enayatifar, R., Abdullah, A. H., Isnin, I. F., Altameem, A., and Lee, M., “Image encryption using a synchronous permutation-diffusion technique”, *Optics and Lasers in Engineering*, vol. 90, 146–154 2017
- Etemad, E., Samavi, S., Soroushmehr, S. R., Karimi, N., Etemad, M., Shirani, S., and Najarian, K., “Robust image watermarking scheme using bit-plane of hadamard coefficients”, *Multimedia Tools and Applications*, vol. 77, no. 2, 2033–2055 2018
- Evans, L. C., *An introduction to stochastic differential equations*, vol. 82, American Mathematical Soc. 2012
- Faragallah, O. S., El-Samie, F. E. A., Ahmed, H. E. H., Elashry, I. F., Shahieen, M. H., El-Rabaie, E.-S. M., and Alshebeili, S. A., *Image encryption: a communication perspective*, CRC Press 2013
- Fawcett, T., “An introduction to ROC analysis”, *Pattern recognition letters*, vol. 27, no. 8, 861–874 2006
- Fodor, I. K., *A survey of dimension reduction techniques*, *Tech. rep.*, Lawrence Livermore National Lab.,

- CA (US) 2002
- Fridrich, J., "Visual hash for oblivious watermarking", in "Security and Watermarking of Multimedia Contents II", vol. 3971, pp. 286–295, International Society for Optics and Photonics 2000
- Fridrich, J. and Goljan, M., "Robust hash functions for digital watermarking", in "Proceedings International Conference on Information Technology: Coding and Computing (Cat. No. PR00540)", pp. 178–183, IEEE 2000
- Furht, B., *Handbook of Internet and multimedia systems and applications*, vol. 6, CRC press 1998
- Furht, B., "Multimedia security: Encryption techniques", *IEC Comprehensive Report on Information Security*, pp. 335–349 2004
- Gaddam, S. V. and Lal, M., "Efficient Cancelable Biometric Key Generation Scheme for Cryptography.", *IJ Network Security*, vol. 11, no. 2, 61–69 2010
- Ganic, E., Zubair, N., and Eskicioglu, A. M., "An optimal watermarking scheme based on singular value decomposition", in "Proceedings of the IASTED international conference on communication, network, and information security", vol. 85 2003
- Ganic, E., Eskiciogulu, A. *et al.*, "Robust embedding of Visual Watermarks using DWTSVD Journal of Electronic Imaging", 2005
- Giri, D., Sherratt, R. S., and Maitra, T., "A novel and efficient session spanning biometric and password based three-factor authentication protocol for consumer usb mass storage devices", *IEEE Transactions on Consumer Electronics*, vol. 62, no. 3, 283–291 2016
- Golub, G. H. and Van Loan, C. F., *Matrix computations*, vol. 3, JHU Press 2012
- Guo, J., Zheng, P., and Huang, J., "Secure watermarking scheme against watermark attacks in the encrypted domain", *Journal of Visual Communication and Image Representation*, vol. 30, 125–135 2015
- Guo, X. C. and Hatzinakos, D., "Content based image hashing via wavelet and radon transform", in "Pacific-Rim Conference on Multimedia", pp. 755–764, Springer 2007
- Han, S.-H. and Chu, C.-H., "Content-based image authentication: current status, issues, and challenges", *International Journal of Information Security*, vol. 9, no. 1, 19–32 2010
- Hao, F., Anderson, R., and Daugman, J., "Combining crypto with biometrics effectively", *IEEE transactions on computers*, vol. 55, no. 9, 1081–1088 2006
- Hardoon, D. R., Szedmak, S., and Shawe-Taylor, J., "Canonical correlation analysis: An overview with application to learning methods", *Neural computation*, vol. 16, no. 12, 2639–2664 2004
- Hasselblatt, B. and Katok, A., *A first course in dynamics: with a panorama of recent developments*, Cambridge University Press 2003
- Hernandez, R. A. P., Miyatake, M. N., and Kurkoski, B. M., "Robust image hashing using image normalization and SVD decomposition", in "2011 IEEE 54th International Midwest Symposium on Circuits and Systems (MWSCAS)", pp. 1–4, IEEE 2011
- Histace, A. and Rousseau, D., "Constructive action of noise for impulsive noise removal in scalar images", *Electronics Letters*, vol. 42, no. 7, 393–395 2006
- Hong, L., Wan, Y., and Jain, A., "Fingerprint image enhancement: Algorithm and performance evaluation", *IEEE transactions on pattern analysis and machine intelligence*, vol. 20, no. 8, 777–789 1998
- Hongler, M.-O., de Meneses, Y. L., Beyeler, A., and Jacot, J., "The resonant retina: exploiting vibration noise to optimally detect edges in an image", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 9, 1051–1062 2003
- Honsinger, C., "Digital watermarking", *Journal of Electronic Imaging*, vol. 11, no. 3, 414 2002
- Hsiao, H.-I. and Lee, J., "Fingerprint image cryptography based on multiple chaotic systems", *Signal Processing*, vol. 113, 169–181 2015
- Hu, H.-T. and Hsu, L.-Y., "Collective blind image watermarking in DWT-DCT domain with adaptive embedding strength governed by quality metrics", *Multimedia Tools and Applications*, vol. 76, no. 5, 6575–6594 2017
- Hua, Z., Zhou, Y., Pun, C.-M., and Chen, C. P., "2D Sine Logistic modulation map for image en-

- ryption", *Information Sciences*, vol. 297, 80–94 2015
- Hua, Z., Yi, S., and Zhou, Y., "Medical image encryption using high-speed scrambling and pixel adaptive diffusion", *Signal Processing*, vol. 144, 134–144 2018
- Huang, J., Shi, Y. Q., and Shi, Y., "Embedding image watermarks in DC components", *IEEE transactions on circuits and systems for video technology*, vol. 10, no. 6, 974–979 2000
- Hubel, D. H. and Wiesel, T. N., "Receptive fields and functional architecture in two nonstriate visual areas (18 and 19) of the cat", *Journal of neurophysiology*, vol. 28, no. 2, 229–289 1965
- Iovane, G., Giordano, P., and Borysenko, S., "Image watermarking via wavelet approach and face biometrics", *Journal of Ambient Intelligence and Humanized Computing*, vol. 2, no. 2, 91–101 2011
- Izquierdo, E., "Fragile watermarking for image authentication", *Multimedia Watermarking Techniques and Applications*, p. 229 2006
- Jain, A. K., Ross, A., and Pankanti, S., "Biometrics: a tool for information security", *IEEE transactions on information forensics and security*, vol. 1, no. 2, 125–143 2006
- Jain, A. K., Flynn, P., and Ross, A. A., *Handbook of biometrics*, Springer Science & Business Media 2007
- Jha, R. K., Biswas, P. K., and Shrivastava, S., "Logo extraction using dynamic stochastic resonance", *Signal, Image and Video Processing*, vol. 7, no. 1, 119–128 2013
- Jha, R. K., Chouhan, R., and Aizawa, K., "Dynamic stochastic resonance-based improved logo extraction in discrete cosine transform domain", *Computers & Electrical Engineering*, vol. 40, no. 6, 1917–1929 2014
- Jie, Z., "A novel block-DCT and PCA based image perceptual hashing algorithm", *arXiv preprint arXiv:1306.4079* 2013
- Kalker, T., Depovere, G., Haitsma, J., and Maes, M. J., "Video watermarking system for broadcast monitoring", in "Security and Watermarking of Multimedia contents", vol. 3657, pp. 103–113, International Society for Optics and Photonics 1999
- Kamran, M. and Farooq, M., "An information-preserving watermarking scheme for right protection of EMR systems", *IEEE Transactions on Knowledge and Data Engineering*, vol. 24, no. 11, 1950–1962 2012
- Kanso, A. and Ghebleh, M., "An efficient and robust image encryption scheme for medical applications", *Communications in Nonlinear Science and Numerical Simulation*, vol. 24, no. 1-3, 98–116 2015
- Katzenbeisser, S. and Petitcolas, F., "Digital Watermarking", *Artech House, London* 2000
- Kirovski, D., Malvar, H., and Yacobi, Y., "Multimedia content screening using a dual watermarking and fingerprinting system", in "Proceedings of the tenth ACM international conference on Multimedia", pp. 372–381, ACM 2002
- Kozat, S. S., Venkatesan, R., and Mihçak, M. K., "Robust perceptual image hashing via matrix invariants", in "2004 International Conference on Image Processing, 2004. ICIP'04.", vol. 5, pp. 3443–3446, IEEE 2004
- Kundur, D. and Hatzinakos, D., "Digital watermarking for telltale tamper proofing and authentication", *Proceedings of the IEEE*, vol. 87, no. 7, 1167–1180 1999
- Kutter, M. and Petitcolas, F. A., "Fair benchmark for image watermarking systems", in "Security and Watermarking of Multimedia Contents", vol. 3657, pp. 226–240, International Society for Optics and Photonics 1999
- Kutter, M., Voloshynovskiy, S. V., and Herrigel, A., "Watermark copy attack", in "Security and Watermarking of Multimedia Contents II", vol. 3971, pp. 371–381, International Society for Optics and Photonics 2000
- Laiphrakpam, D. S. and Khumanthem, M. S., "Medical image encryption based on improved El-Gamal encryption technique", *Optik-International Journal for Light and Electron Optics*, vol. 147, 88–102 2017
- Lasota, A. and Mackey, M. C., *Chaos, fractals, and noise: stochastic aspects of dynamics*, vol. 97, Springer Science & Business Media 2013

- Lefebvre, F., Czyz, J., and Macq, B., "A robust soft hash algorithm for digital image signature", in "Proceedings 2003 International Conference on Image Processing (Cat. No. 03CH37429)", vol. 2, pp. II-495, IEEE 2003
- Lei, Y., Wang, Y., and Huang, J., "Robust image hash in Radon transform domain for authentication", *Signal Processing: Image Communication*, vol. 26, no. 6, 280-288 2011
- Li, C. and Lo, K.-T., "Optimal quantitative cryptanalysis of permutation-only multimedia ciphers against plaintext attacks", *Signal processing*, vol. 91, no. 4, 949-954 2011
- Li, C., Li, S., Asim, M., Nunez, J., Alvarez, G., and Chen, G., "On the security defects of an image encryption scheme", *Image and Vision Computing*, vol. 27, no. 9, 1371-1381 2009
- Li, C., Liu, Y., Xie, T., and Chen, M. Z., "Breaking a novel image encryption scheme based on improved hyperchaotic sequences", *Nonlinear Dynamics*, vol. 73, no. 3, 2083-2089 2013
- Lian, S., *Multimedia content encryption: techniques and applications*, Auerbach Publications 2008
- Licks, V. and Jordan, R., "Geometric attacks on image watermarking systems", *IEEE multimedia*, , no. 3, 68-78 2005
- Lin, S. D. and Chen, C.-F., "A robust DCT-based watermarking for copyright protection", *IEEE Transactions on Consumer Electronics*, vol. 46, no. 3, 415-421 2000
- Lin, W.-H., Horng, S.-J., Kao, T.-W., Fan, P., Lee, C.-L., and Pan, Y., "An efficient watermarking method based on significant difference of wavelet coefficient quantization", *IEEE Transactions on Multimedia*, vol. 10, no. 5, 746-757 2008
- Liu, J., Ma, Y., Li, S., Lian, J., and Zhang, X., "A new simple chaotic system and its application in medical image encryption", *Multimedia Tools and Applications*, vol. 77, no. 17, 22787-22808 2018a
- Liu, R. and Tan, T., "An SVD-based watermarking scheme for protecting rightful ownership", *IEEE transactions on multimedia*, vol. 4, no. 1, 121-128 2002
- Liu, X.-L., Lin, C.-C., and Yuan, S.-M., "Blind dual watermarking for color images' authentication and copyright protection", *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 28, no. 5, 1047-1055 2018b
- Liu, Y., Tang, S., Liu, R., Zhang, L., and Ma, Z., "Secure and robust digital image watermarking scheme using logistic and RSA encryption", *Expert Systems with Applications*, vol. 97, 95-105 2018c
- Lu, C.-S. and Liao, H.-Y., "Multipurpose watermarking for image authentication and protection", *IEEE transactions on image processing*, vol. 10, no. 10, 1579-1592 2001
- Lu, H., Shen, R., and Chung, F.-L., "Fragile watermarking scheme for image authentication", *Electronics Letters*, vol. 39, no. 12, 898-900 2003
- Lu, W., Lu, H., and Chung, F.-L., "Novel robust image watermarking using difference correlation detector", *Computer Standards & Interfaces*, vol. 29, no. 1, 132-137 2007
- Lv, X. and Wang, Z. J., "Fast Johnson-Lindenstrauss transform for robust and secure image hashing", in "2008 IEEE 10th workshop on multimedia signal processing", pp. 725-729, IEEE 2008
- Lv, X. and Wang, Z. J., "Perceptual image hashing based on shape contexts and local feature points", *IEEE Transactions on Information Forensics and Security*, vol. 7, no. 3, 1081-1093 2012
- Mallat, S. G., "A theory for multiresolution signal decomposition: the wavelet representation", *IEEE transactions on pattern analysis and machine intelligence*, vol. 11, no. 7, 674-693 1989
- Maltoni, D., Maio, D., Jain, A. K., and Prabhakar, S., *Handbook of fingerprint recognition*, Springer Science & Business Media 2009
- Menezes, A. J., Vanstone, S. A., and Oorschot, P. C. V., *Handbook of Applied Cryptography*, CRC Press, Inc., Boca Raton, FL, USA, 1st edn. 1996
- Mihçak, M. K. and Venkatesan, R., "New iterative geometric methods for robust perceptual image hashing", in "ACM Workshop on Digital Rights Management", pp. 13-21, Springer 2001a
- Mihçak, M. K. and Venkatesan, R., "A perceptual audio hashing algorithm: a tool for robust audio identification and information hiding", in "International Workshop on Information Hiding", pp. 51-65, Springer 2001b
- Miwa, K., Morimoto, N., and Shimizu, S., "Data control system", US Patent 6,230,268 May 8 2001
- Monga, V., *Perceptually based methods for robust image hashing*, Ph.D. thesis 2005

- Monga, V. and Evans, B. L., "Robust perceptual image hashing using feature points", in "2004 International Conference on Image Processing, 2004. ICIP'04.", vol. 1, pp. 677–680, IEEE 2004
- Monga, V. and Evans, B. L., "Perceptual image hashing via feature points: performance evaluation and tradeoffs", *IEEE transactions on Image Processing*, vol. 15, no. 11, 3452–3465 2006
- Monga, V. and Mihçak, M. K., "Robust and Secure Image Hashing via Non-Negative Matrix Factorizations.", *IEEE Trans. Information Forensics and Security*, vol. 2, no. 3-1, 376–390 2007
- Morito, H., Yoshiura, H., and Roe, M., "Copy protection apparatus and method", US Patent 6,310,956 Oct 30 2001
- Muharemagic, E. and Furht, B., "Multimedia security: watermarking techniques", *Comprehensive Report on Information Security, International Engineering Consortium, Chicago, IL* 2004
- Neelima, A. and Singh, K. M., "Perceptual hash function based on scale-invariant feature transform and singular value decomposition", *The Computer Journal*, vol. 59, no. 9, 1275–1281 2016
- Nikolaidis, N. and Pitas, I., "Copyright protection of images using robust digital signatures", in "1996 IEEE International Conference on Acoustics, Speech, and Signal Processing Conference Proceedings", vol. 4, pp. 2168–2171, IEEE 1996
- Oraintara, S., Chen, Y.-J., and Nguyen, T. Q., "Integer fast Fourier transform", *IEEE Transactions on Signal Processing*, vol. 50, no. 3, 607–618 2002
- Ouyang, J., Coatrieux, G., and Shu, H., "Robust hashing for image authentication using quaternion discrete Fourier transform and log-polar transform", *Digital Signal Processing*, vol. 41, 98–109 2015
- Ouyang, J., Wen, X., Liu, J., and Chen, J., "Robust hashing based on quaternion zernike moments for image authentication", *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, vol. 12, no. 4s, 63 2016
- Ouyang, J., Liu, Y., and Shu, H., "Robust hashing for image authentication using SIFT feature and quaternion Zernike moments", *Multimedia Tools and Applications*, vol. 76, no. 2, 2609–2626 2017
- Parakh, A., "A d-sequence based recursive random number generator", *arXiv preprint cs/0603029* 2006
- Pei, S.-C. and Ding, J.-J., "The integer transforms analogous to discrete trigonometric transforms", *IEEE Transactions on Signal Processing*, vol. 48, no. 12, 3345–3364 2000
- Pérez-Freire, L. and Pérez-González, F., "Spread-spectrum watermarking security", *IEEE Transactions on Information Forensics and Security*, vol. 4, no. 1, 2–24 2009
- Petitcolas, F. A., "Watermarking schemes evaluation", *IEEE signal processing magazine*, vol. 17, no. 5, 58–64 2000
- Petitcolas, F. A., "Digital watermarking", in "Digital Rights Management", pp. 81–92, Springer 2003
- Petitcolas, F. A., Anderson, R. J., and Kuhn, M. G., "Attacks on copyright marking systems", in "International workshop on information hiding", pp. 218–238, Springer 1998
- Phophalia, A., Rajwade, A., and Mitra, S. K., "Rough set based image denoising for brain MR images", *Signal Processing*, vol. 103, 24–35 2014
- Ping, P., Xu, F., Mao, Y., and Wang, Z., "Designing permutation-substitution image encryption networks with Henon map", *Neurocomputing*, vol. 283, 53–63 2018
- Pitas, I. and Kaskalis, T., "Applying signatures on digital images", *Proc. IEEE Nonlinear Signal and Image Processing*, pp. 460–463 1995
- Plonka, G. and Tasche, M., "Invertible integer DCT algorithms", *Applied and Computational Harmonic Analysis*, vol. 15, no. 1, 70–88 2003
- Podilchuk, C. I. and Delp, E. J., "Digital watermarking: algorithms and applications", *IEEE signal processing Magazine*, vol. 18, no. 4, 33–46 2001
- PUB, F., "180-3, SECURE HASH STANDARD (SHS)", *Federal Information Processing Standards Publication* 2008
- Qi, X. and Xin, X., "A quantization-based semi-fragile watermarking scheme for image content authentication", *Journal of visual communication and image representation*, vol. 22, no. 2, 187–200

- Qiao, L. and Nahrstedt, K., "Watermarking schemes and protocols for protecting rightful ownership and customer's rights", *Journal of Visual Communication and Image Representation*, vol. 9, no. 3, 194–210 1998
- Qin, C., Chang, C.-C., and Tsou, P.-L., "Robust image hashing using non-uniform sampling in discrete Fourier domain", *Digital Signal Processing*, vol. 23, no. 2, 578–585 2013
- Rivest, R., *The MD5 message-digest algorithm*, Tech. rep. 1992
- Rivest, R. L., Shamir, A., and Adleman, L., "A Method for Obtaining Digital Signatures and Public-key Cryptosystems", *Commun. ACM*, vol. 21, no. 2, 120–126 Feb 1978, URL <http://doi.acm.org/10.1145/359340.359342>
- Roy, S. and Sun, Q., "Robust hash for detecting and localizing image tampering", in "2007 IEEE International Conference on Image Processing", vol. 6, pp. VI–117, IEEE 2007
- Roy, S., Sun, Q., and Kalker, T., "Performance analysis of locality preserving image hash", in "2008 15th IEEE International Conference on Image Processing", pp. 1268–1271, IEEE 2008
- Sadourny, Y. and Conan, V., "A proposal for supporting selective encryption in JPSEC", *IEEE Transactions on Consumer Electronics*, vol. 49, no. 4, 846–849 2003
- Saxena, A. and Fernandes, F. C., "DCT/DST-based transform coding for intra prediction in image/video coding", *IEEE Transactions on Image Processing*, vol. 22, no. 10, 3974–3981 2013
- Schneider, M. and Chang, S.-F., "A robust content based digital signature for image authentication", in "Proceedings of 3rd IEEE International Conference on Image Processing", vol. 3, pp. 227–230, IEEE 1996
- Schneier, B., *Applied cryptography: protocols, algorithms, and source code in C*, John Wiley & Sons 2007
- Serdean, C., Ambroze, M., Tomlinson, M., and Wade, J., "DWT-based high-capacity blind video watermarking, invariant to geometrical attacks", *IEE Proceedings-Vision, Image and Signal Processing*, vol. 150, no. 1, 51–58 2003
- Shaohui, L., Hongxun, Y., and Wen, G., "Neural network based steganalysis in still images", in "2003 International Conference on Multimedia and Expo. ICME'03. Proceedings (Cat. No. 03TH8698)", vol. 2, pp. II–509, IEEE 2003
- Shi, Y., Wang, X., and Fan, H., "Light-weight white-box encryption scheme with random padding for wearable consumer electronic devices", *IEEE Transactions on Consumer Electronics*, vol. 63, no. 1, 44–52 2017
- Singh, A. K., Dave, M., and Mohan, A., "Multilevel encrypted text watermarking on medical images using spread-spectrum in DWT domain", *Wireless Personal Communications*, vol. 83, no. 3, 2133–2150 2015a
- Singh, A. K., Kumar, B., Dave, M., and Mohan, A., "Robust and imperceptible spread-spectrum watermarking for telemedicine applications", *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences*, vol. 85, no. 2, 295–301 2015b
- Singh, S. P. and Bhatnagar, G., "A novel chaos based robust watermarking framework", in "Proceedings of International Conference on Computer Vision and Image Processing", pp. 439–447, Springer 2017a
- Singh, S. P. and Bhatnagar, G., "A robust image hashing based on discrete wavelet transform", in "2017 IEEE International Conference on Signal and Image Processing Applications (ICSIPA)", pp. 440–444, IEEE 2017b
- Singh, S. P. and Bhatnagar, G., "A new robust watermarking system in integer DCT domain", *Journal of Visual Communication and Image Representation*, vol. 53, 86–101 2018a
- Singh, S. P. and Bhatnagar, G., "A robust watermarking scheme based on image normalization", in "2018 IEEE 14th International Colloquium on Signal Processing & Its Applications (CSPA)", pp. 140–144, IEEE 2018b
- Singh, S. P. and Bhatnagar, G., "A simplified watermarking algorithm based on lifting wavelet transform", *Multimedia Tools and Applications*, pp. 1–22 2019
- Soman, K., *Insight into wavelets: From theory to practice*, PHI Learning Pvt. Ltd. 2010

- Sui, L. and Gao, B., "Color image encryption based on gyrator transform and Arnold transform", *Optics & Laser Technology*, vol. 48, 530–538 2013
- Sun, R., Sun, H., and Yao, T., "A SVD-and quantization based semi-fragile watermarking technique for image authentication", in "6th International Conference on Signal Processing, 2002.", vol. 2, pp. 1592–1595, IEEE 2002
- Sun, S. and Lei, B., "On an aperiodic stochastic resonance signal processor and its application in digital watermarking", *Signal Processing*, vol. 88, no. 8, 2085–2094 2008
- Suzuki, T. and Ikehara, M., "Integer DCT based on direct-lifting of DCT-IDCT for lossless-to-lossy image coding", *IEEE Transactions on Image Processing*, vol. 19, no. 11, 2958–2965 2010
- Swaminathan, A., Mao, Y., and Wu, M., "Robust and secure image hashing", *IEEE Transactions on Information Forensics and security*, vol. 1, no. 2, 215–230 2006
- Sweldens, W., "The lifting scheme: A custom-design construction of biorthogonal wavelets", *Applied and computational harmonic analysis*, vol. 3, no. 2, 186–200 1996
- Tang, Z., Yang, F., Huang, L., and Zhang, X., "Robust image hashing with dominant DCT coefficients", *Optik*, vol. 125, no. 18, 5102–5107 2014a
- Tang, Z., Zhang, X., and Zhang, S., "Robust perceptual image hashing based on ring partition and NMF", *IEEE transactions on knowledge and data engineering*, vol. 26, no. 3, 711–724 2014b
- Tang, Z., Huang, L., Zhang, X., and Lao, H., "Robust image hashing based on color vector angle and canny operator", *AEU-International Journal of Electronics and Communications*, vol. 70, no. 6, 833–841 2016
- Tang, Z., Chen, L., Zhang, X., and Zhang, S., "Robust image hashing with tensor decomposition", *IEEE Transactions on Knowledge and Data Engineering*, vol. 31, no. 3, 549–560 2019
- Tao, H., Chongmin, L., Zain, J. M., and Abdalla, A. N., "Robust image watermarking theories and techniques: A review", *Journal of applied research and technology*, vol. 12, no. 1, 122–138 2014
- Uludag, U. and Jain, A. K., "Multimedia content protection via biometrics-based encryption", in "2003 International Conference on Multimedia and Expo. ICME'03. Proceedings (Cat. No. 03TH8698)", vol. 3, pp. III–237, IEEE 2003
- Uludag, U., Pankanti, S., Prabhakar, S., and Jain, A. K., "Biometric cryptosystems: issues and challenges", *Proceedings of the IEEE*, vol. 92, no. 6, 948–960 2004
- Van Schyndel, R. G., Tirkel, A. Z., and Osborne, C. F., "A digital watermark", in "Proceedings of 1st International Conference on Image Processing", vol. 2, pp. 86–90, IEEE 1994
- Venkatesan, R., Koon, S.-M., Jakubowski, M. H., and Moulin, P., "Robust image hashing", in "Proceedings 2000 International Conference on Image Processing (Cat. No. 00CH37101)", vol. 3, pp. 664–666, IEEE 2000
- Voloshynovskiy, S., Pereira, S., Pun, T., Eggers, J. J., and Su, J. K., "Attacks on digital watermarks: classification, estimation based attacks, and benchmarks", *IEEE communications Magazine*, vol. 39, no. 8, 118–126 2001
- Voyatzis, G. and Pitas, I., "Applications of toral automorphisms in image watermarking", in "Proceedings of 3rd IEEE International Conference on Image Processing", vol. 2, pp. 237–240, IEEE 1996
- Wang, S.-H. and Lin, Y.-P., "Wavelet tree quantization for copyright protection watermarking", *IEEE transactions on Image Processing*, vol. 13, no. 2, 154–165 2004
- Wang, X., Pang, K., Zhou, X., Zhou, Y., Li, L., and Xue, J., "A visual model-based perceptual image hash for content authentication", *IEEE Transactions on Information Forensics and Security*, vol. 10, no. 7, 1336–1349 2015
- Wang, Z. and Bovik, A. C., "Modern image quality assessment", *Synthesis Lectures on Image, Video, and Multimedia Processing*, vol. 2, no. 1, 1–156 2006
- Whittle, P., "Increments and decrements: luminance discrimination", *Vision research*, vol. 26, no. 10, 1677–1691 1986
- Wu, G. and Qiu, Z., "A novel watermarking scheme based on stochastic resonance", in "2006 8th international Conference on Signal Processing", vol. 2, IEEE 2006

- Wu, H.-T., Huang, J., and Shi, Y.-Q., "A reversible data hiding method with contrast enhancement for medical images", *Journal of Visual Communication and Image Representation*, vol. 31, 146–153 2015
- Wu, J., Liao, X., and Yang, B., "Image encryption using 2D Hénon-Sine map and DNA approach", *Signal Processing*, vol. 153, 11–23 2018
- Wu, M. and Liu, B., "Watermarking for image authentication", in "Proceedings 1998 International Conference on Image Processing. ICIP98 (Cat. No. 98CB36269)", vol. 2, pp. 437–441, IEEE 1998
- Xiang, S., Kim, H.-J., and Huang, J., "Histogram-based image hashing scheme robust against geometric deformations", in "Proceedings of the 9th workshop on Multimedia & security", pp. 121–128, ACM 2007
- Xiang, S., Kim, H. J., and Huang, J., "Invariant image watermarking based on statistical features in the low-frequency domain", *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 18, no. 6, 777–790 2008
- Xiang, T., Guo, S., and Li, X., "Perceptual visual security index based on edge and texture similarities", *IEEE Transactions on Information Forensics and Security*, vol. 11, no. 5, 951–963 2016
- Xiao, D., Fu, Q., Xiang, T., and Zhang, Y., "Chaotic image encryption of regions of interest", *International Journal of Bifurcation and Chaos*, vol. 26, no. 11, 1650193 2016
- Ye, Q., Huang, R., He, X., and Zhang, C., "A SR-based radon transform to extract weak lines from noise images", in "Image Processing, 2003. ICIP 2003. Proceedings. 2003 International Conference on", vol. 1, pp. I-849, IEEE 2003
- Ye, Q., Huang, H., and Zhang, C., "Image enhancement using stochastic resonance [sonar image processing applications]", in "Image Processing, 2004. ICIP'04. 2004 International Conference on", vol. 1, pp. 263–266, IEEE 2004
- Zeng, W. and Liu, B., "A statistical watermark detection technique without using original images for resolving rightful ownerships of digital images", *IEEE Transactions on Image Processing*, vol. 8, no. 11, 1534–1548 1999
- Zeng, Y., Cheng, L., Bi, G., and Kot, A. C., "Integer DCTs and fast algorithms", *IEEE Transactions on Signal Processing*, vol. 49, no. 11, 2774–2782 2001
- Zhang, L., Zhang, L., Mou, X., Zhang, D. et al., "FSIM: a feature similarity index for image quality assessment", *IEEE transactions on Image Processing*, vol. 20, no. 8, 2378–2386 2011
- Zhang, L.-b., Zhu, Z.-l., Yang, B.-q., Liu, W.-y., Zhu, H.-f., and Zou, M.-y., "Cryptanalysis and improvement of an efficient and secure medical image protection scheme", *Mathematical Problems in Engineering*, vol. 2015 2015a
- Zhang, L.-b., Zhu, Z.-l., Yang, B.-q., Liu, W.-y., Zhu, H.-f., and Zou, M.-y., "Medical image encryption and compression scheme using compressive sensing and pixel swapping based permutation approach", *Mathematical Problems in Engineering*, vol. 2015 2015b
- Zhang, Q., Guo, L., and Wei, X., "Image encryption using DNA addition combining with chaotic maps", *Mathematical and Computer Modelling*, vol. 52, no. 11-12, 2028–2035 2010
- Zhang, X. and Wang, S., "Statistical fragile watermarking capable of locating individual tampered pixels", *IEEE Signal processing letters*, vol. 14, no. 10, 727–730 2007
- Zhang, Y. and Xiao, D., "An image encryption scheme based on rotation matrix bit-level permutation and block diffusion", *Communications in Nonlinear Science and Numerical Simulation*, vol. 19, no. 1, 74–82 2014
- Zhao, Y., Campisi, P., and Kundur, D., "Dual domain watermarking for authentication and compression of cultural heritage images", *IEEE Transactions on Image Processing*, vol. 13, no. 3, 430–448 2004
- Zhao, Y., Wang, S., Zhang, X., and Yao, H., "Robust hashing for image authentication using Zernike moments and local features", *IEEE transactions on information forensics and security*, vol. 8, no. 1, 55–63 2013
- Zheng, D., Zhao, J., and El Saddik, A., "RST-invariant digital image watermarking based on log-polar mapping and phase correlation", *IEEE transactions on circuits and systems for video technol-*

- ogy, vol. 13, no. 8, 753–765 2003
- Zhou, X., Wang, C., and Jiang, B., “All Phase Inverse Discrete Sine Biorthogonal Transform and Its Application in Image Coding”, *Journal of Communications*, vol. 12, no. 1 2017
- Zhou, Y., Cao, W., and Chen, C. P., “Image encryption using binary bitplane”, *Signal Processing*, vol. 100, 197–207 2014
- Zhu, W., Xiong, Z., and Zhang, Y.-Q., “Multiresolution watermarking for images and video”, *IEEE transactions on circuits and systems for video technology*, vol. 9, no. 4, 545–550 1999
- Zhu, X., Ho, A. T., and Marziliano, P., “A new semi-fragile image watermarking with robust tampering restoration using irregular sampling”, *Signal Processing: Image Communication*, vol. 22, no. 5, 515–528 2007