# References


[1] Pentland, A. "Looking at people". *IEEE Trans. Pattern Analysis and Machine Intelligence* 22, 1 (2000): 107-119.

[2] Pentland, A. "Perceptual intelligence". *Comm. ACM* 43, 3 (2000): 35-44.

[3] Pentland, A. and Choudhury, T. "Face recognition for smart environments". *IEEE Computer* 33, 2 (2000): 50-55.

[4] Yang, M., Kriegman, D.J., and Ahuja, N. "Detecting faces in images: A survey". *IEEE Trans. Pattern Analysis and Machine Intelligence* 24, 1, (January 2002): 34-58.

[5] Spacek, L., "Essex face database" (Online). Available from: *http://cswww.essex.ac.uk/allfaces/index.html* [1 December 2001].

[6] Martinez, A.M. and Benavente, R. "The AR face database" (Online). Available from: *http://rvl1.ecn.purdue.edu/~aleix/aleix_face_DB.html* [17 December 2001].

[7] Blanz, V. and Vetter, T. "A morphable model for the synthesis of 3D faces". in *Proc. 26th Annual Conf. Computer graphics and interactive techniques* (1999): 187-194.

[8] Cohen, I., Cozman, F.G., Sebe, N., Cirelo, M.C., and Huang, T.S. "Semisupervised Learning of Classifiers: Theory, algorithms, and their application to human-computer interaction". *IEEE Trans. Pattern Analysis and Machine Intelligence* 26, 12, (December 2004): 1553-1567.

[9] Barkhuysen, P., Krahmer, E., and Swerts, M. "Problem detection in humanmachine interactions based on facial expressions of users". *Speech Communication* 45, (2005): 343-359.

[10] Hershler, O. and Hochstein, S. "At first sight: A high-level pop out effect for faces". *Vision Research* 45, (2005): 1707-1724.

[11] Gao, Y. and Qi, Y. "Robust visual similarity retrieval in single model face databases". *Pattern Recognition* 38, (2005): 1009-1020.

[12] Goldman, A.I. and Sripada, C.S. "Simulationist models of face-based emotion recognition". *Cognition* 94, (2005): 193-213.

[13] Zhang, S. and Liu, Z. "A robust, real-time ellipse detector". *Pattern Recognition* 38, (2005): 273-287.

[14] Anderson, K. and McOwan, P.W. "Robust real-time face tracker for cluttered environments". *Computer Vision and Image Understanding* 95, (2004): 184-200.

[15] Shih, F.Y. and Chuang, C. "Automatic extraction of head and face boundaries and facial features". *Information Sciences* 158, (2004): 117-130.

[16] Rizon, M. and Kawaguchi, T. "Automatic eye detection using intensity and edge information". in *TENCON 2000 Proc.* (2000): 415-420.

[17] Kawaguchi, T., Hidaka, D., and Rizon, M. "Detection of eyes from human faces by Hough transform and separability filter". in *Proc. IEEE Int'l Conf. Image Processing* (2000): 49-52.

[18] Berg, A.C. and Malik, J. "Geometric blur for template matching". in *Proc. IEEE Computer Soc. Conf. Computer Vision and Pattern Recognition* 1 (2001): I-607-I-614.

[19] Zhang, L. and Lenders, P. "Knowledge-based eye detection for human face recognition". in *Proc. Fourth IEEE Int'l Conf. Knowledge-Based Intelligent Engineering* (2000): 117-120.

[20] Liu, Z., Yang J., and Peng, N.S. "An efficient face segmentation algorithm based on binary partition tree". *Signal Processing: Image Communication* 20, (2005): 295-314.

[21] Tsalakanidou, F., Malassiotis S., and Strintzis M.G. "Face localization and authentication using color and depth images". *IEEE Trans. Image Processing* 14, 2, (February 2005): 152-168.

[22] Soriano, M., Martinkauppi, B., Huovinen, S., and Laaksonen, M. "Adaptive skin color modeling using the skin locus for selecting training pixels". *Pattern Recognition* 36, (2003): 681-690.

[23] Wong, K., Lam, K., and Siu, W. "A robust scheme for live detection of human faces". *Signal Processing: Image Communication* 18, (2003): 103-114.

[24] Hsu, R.L., Abdel-Mottaleb, M., and Jain, A.K. "Face detection in color images". *IEEE Trans. Pattern Analysis and Machine Intelligence* 24, 5, (2002): 696-706.

[25] Cho, K., Jang, J., and Hong, K. "Adaptive skin-color-filter". *Pattern Recognition* 34, 5, (2001): 1067-1073.

[26] Albiol, A., Torres, L., and Delp, E. "An unsupervised color image segmentation algorithm for face detection applications". in *Proc. Int'l Conf. Image Processing* (2001): 681-684.

[27] Wang, Y. and Yuan, B. "A novel approach for human face detection from color images under complex background". *Pattern Recognition* 34, 10, (2001): 1983-1992.

[28] Cai, J. and Goshtasby, A. "Detecting human faces in color images". *Image and Vision Computing* 18, 1, (1999): 63-75.

[29] Chai, D., and Ngan, K.N. "Locating facial region of a head-and-shoulders color image". *Proc. Third Int'l Conf. Automatic Face and Gesture Recognition* (1998): 124-129.

[30] Huang, L., Shimizu, A., Hagihara, Y., and Kobatake, H. "Face detection from cluttered images using a polynomial neural network". *Neurocomputing* 51, (2003): 197-211.

[31] Fasel, I., Fortenberry, B., and Movellan J. "A generative framework for real time object detection and classification". *Computer Vision and Image Understanding* 98, (2005): 182-210.

[32] Sun, Z., Bebis, G., and Miller, R. "Object detection using feature subset selection". *Pattern Recognition* 37, (2004): 2165-2176.

[33] Garcia, C. and Delakis, M. "Convolutional face finder: A neural architecture for fast and robust face detection". *IEEE trans. Pattern Analysis and Machine Intelligence* 26, 11, (November 2004): 1408-1423.

[34] Xiao, R., Li, M., and Zhang, H. "Robust multipose face detection in images". *IEEE Trans. Circuits and Systems for Video Technology* 14, 1, (2004): 31-41.

[35] Li, Y., Gong, S., Sherrah, J., and Liddell, H. "Support vector machine based multi-view face detection and recognition". *Image and Vision Computing* 22, 5, (2004): 413-427.

[36] Wu, J. and Zhou, Z. "Efficient face candidates selector for face detection". *Pattern Recognition* 36, (2003): 1175-1186.

[37] Huang, L., Shimizu, A., Hagihara, Y., and Kobatake, H. "Gradient feature extraction for classification-based face detection". *Pattern Recognition* 36, (2003): 2501-2511.

[38] Liu, C. "A Bayesian discriminating features method for face detection". *IEEE Trans. Pattern Analysis and Machine Intelligence* 25, 6, (2003): 725-740.

[39] Ng, J. and Gong, S. "Composite support vector machines for detection of faces across views and pose estimation". *Image and Vision Computing* 20, 5-6, (2002): 359-368.

[40] Samad, S.A., Hussain, A., and Teoh, A. "Eye detection using hybrid rule based approach and contour mapping". in *Proc. Sixth IEEE Int'l Symp. Signal Processing and its Applications* (2001): 631-634.

[41] Lee, H.W., Kil, S.K., Han, Y., and Hong, S.H. "Automatic face and facial features detection". in *Proc. IEEE Int'l Symp. Industrial Electronics* (2001): 254-259.

[42] Kim, H.C., Kim, D., and Bang, S.Y. "A PCA mixture nodel with an efficient model selection method". in *Proc. IEEE Int'l J. Conf. Neural Networks* (2001): 430-435.

[43] Mariani, R. "Subpixellic Eyes Detection". in *Proc. IEEE Int'l Conf. image analysis and processing* (1999): 496-501.

[44] Nguyen, T. and Huang, T. "Segmentation, grouping and feature detection for face image analysis". in *Proc. IEEE Int'l Symp. Computer Vision* (1995): 593-598.

[45] Beymer, D. "Feature correspondence by interleaving shape and texture computations". in *Proc. IEEE Computer Soc. Conf. Computer Vision and Pattern Recognition* (1996): 921-928.

[46] Livin, M. and Luthon F. "Nonlinear color space and spatiotemporal MRF for hierarchical segmentation of face features in video". *IEEE trans. Image Processing* 13, 1, (January 2004): 63-71.

[47] Loutas, E., Pitas, I., and Nikou C. "Probabilistic multiple face detection and tracking using entropy measures". *IEEE trans. Circuits and Systems for Video Technology* 14, 1, (January 2004): 128-135.

[48] Spors, S. and Rabenstein, R. "A real-time face tracker for color video". in *Proc. IEEE Int'l Conf. Acoustics, Speech, and Signal Processing* (2001): 1493-1496.

[49] Perez, C.A., Palma, A., Holzmann, C.A., and Pena, C. "Face and eye tracking algorithm based on digital image processing". in *Proc. IEEE Int'l Conf. Systems, Man, and Cybernetics* (2001): 1178-1183.

[50] Schubert, A. "Detection and tracking of facial features in real time using a synergistic approach of spatio-temporal models and generalized Hough-transform techniques". in *Proc. Fourth IEEE Int'l Conf. Automatic Face and Gesture Recognition* (2000): 116-121.

[51] Colmenarez, A., Frey, B., and Huang, T.S. "Detection and tracking of faces and facial features". in *Proc. IEEE Int'l Conf. Image Processing* (1999): 657-661.

[52] Ravyse, I., Sahli, H., Reinders, M.J.T., and Cornelis, J. "Eye activity detection and recognition using morphological scale-space decomposition". in *Proc. 15th IEEE Int'l Conf. Pattern Recognition* (2000): 1080-1083.

[53] Kumar, V.P. and Poggio, T. "Learning-based approach to real time tracking and analysis of faces". in *Proc. Fourth IEEE Int'l Conf. Automatic Face and Gesture Recognition* (2000): 96-101.

[54] Smeraldi, F., Higun, J. "Facial feature detection by saccadic exploration of the Gabor decomposition". in *Proc. IEEE Int'l Conf. Image Processing* (1998): 163-167.

[55] Viola, P. and Jones, M. "Robust real-time object detection". in *Proc. Second Int'l Workshop Statistical and Computational Theories of Vision - Modeling, Learning, Computing and Sampling* (2001): 1-25.

[56] Fleuret, F. and Geman, D. "Coarse-to-fine face detection". *Int'l J. Computer Vision* 41, 1-2, (2001): 85-107.

[57] Canny, J. "A computational approach to edge detection". *IEEE Trans. Pattern Analysis and Machine Intelligence* PAMI-8, 6, (1986): 679-698.

[58] Haykin, S. *Neural Networks.* 2 nd ed. New Jersey: Prentice Hall, (1999): 10-175.

[59] Hertz, J., Krogh A., and Palmer R.G. *Introduction to the Theory of Neural Computation.* California: Addison-Wesley Publishing, (1991).

[60] Prechelt, L. "Automatic early stopping using cross validation: Quantifying the criteria". *Neural Networks* 11, 4, (1998): 761-767.

[61] Phimoltares, S., Lursinsap, C., and Chamnongthai, K. "Locating essential facial features using neural visual model". in *Proc. First IEEE Int'l Conf. Machine Learning and Cybernetics* (2002): 1914-1919.

[62] Phimoltares, S., Lursinsap, C., and Chamnongthai, K. "Facial feature extraction with rotational invariance using neural visual model". in *Proc. Third Int'l Conf. Intelligent Technologies and Third Vietnam-Japan Symp. Fuzzy Systems and Applications* (2002): 226-234.

[63] Fahlman, S.E. and Lebiere, C. "The Cascade-Correlation learning architecture". in *Touretzky, D.S. (eds.) Advances in Neural Information Processing Systems* 2, (1990): 524-532.

[64] Cun, Y.L., Denker, J.S., and Solla, S.A. "Optimal brain damage". in *Touretzky, D.S. (eds.) Advances in Neural Information Processing Systems* 2, (1990): 598-605.

[65] Nowlan, S.J. and Hinton, G.E. "Simplifying neural networks by soft weight-sharing". *Neural Computation* 4, 4, (1992): 473-493.

[66] Phimoltares, S., Lursinsap, C., and Chamnongthai, K. "Tight bounded localization of facial features with color and rotational independence". in *Proc. IEEE Int'l Symp. Circuits and Systems* (2003): V-809-V-812.

[67] Gonzalez, R.C. and Woods, R.E. *Digital Image Processing.* (n.p.): Addison-Wesley Publishing, (1993).

[68] Toft, P. "The Radon transform" (Online). Available from: *http://eivind.imm.dtu.dk/staff/ptoft/Radon/Radon.html* [20 January 2002].

[69] Rowley, H.A., Baluja, S., and Kanade, T. "Neural network-based face detection". *IEEE Trans. Pattern Analysis and Machine Intelligence* 20, 1, (1998): 23-38.

[70] Graham, D.B. and Allinson, N.M. "Characterizing virtual Eigen signatures for general purpose face recognition". in *Wechsler, H., Phillips, P.J., Bruce, V., Fogelman-Soulie, F., and Huang, T.S. (eds.) Face recognition: From theory to applications, NATO ASI Series F, Computer and Systems Sciences* 163, (1998): 446-456.

[71] Schneiderman, H. and Kanade, T. "A statistical method for 3D object detection applied to faces and cars". in *Int'l Conf. Computer Vision and Pattern Recognition* (2000): 1746-1751.

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- S. Phimoltares, C. Lursinsap, and K. Chamnongthai, "Facial Feature Extraction with Rotational Invariance Using Neural Visual Model", in *Proc. of the Third Int'l Conf. on Intelligent Technologies and Third Vietnam-Japan Symp. on Fuzzy Systems and Applications (InTech/VJFuzzy'2002)*, Hanoi, Vietnam, December 3-5, pp. 226-234, 2002.
- S. Phimoltares, C. Lursinsap, and K. Chamnongthai, "Locating Essential Facial Features Using Neural Visual Model", in *Proc. of the First IEEE Int'l Conf. on Machine Learning and Cybernetics (ICMLC2002)*, Beijing, China, November 4-5, no. 1, 1914-1919, 2002.
- S. Phimoltares, K. Chamnongthai, and C. Lursinsap, "Hybrid Binary Image Compression", in *Proc. of the 1999 IEEE Int'l Symp. on Intelligent Signal Processing and Communication Systems (ISPACS'99)*, Phuket, Thailand, December 8-10, pp. 203-206, 1999.
- S. Phimoltares, K. Chamnongthai, and C. Lursinsap, "Binary Image Compression Using Reordering and Grouping Algorithm", in *Proc. of the 1999 National Computer Science and Engineering Conference (NCSEC'99)*, Bangkok, Thailand, December 15-17, pp. 158-164, 1999.
- S. Phimoltares, K. Chamnongthai, and C. Lursinsap, "Hybrid Binary Image Compression", in *Proc. of the Fifth IEEE Int'l Symp. on Signal Processing and its Applications (ISSPA'99)*, Brisbane, Australia, August 22-25, no. 2, pp. 809-812, 1999.

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