

REFERENCES

- Albregtsen F. Statistical Texture Measures Computed from Gray Level Co-occurrence Matrices. Image Processing Laboratory Department of Informatics, University Oslo, 2008.
- Amaro D. A. V., “Statistical Shape Analysis for bio-structures: Local Shape Modelling, Techniques and Applications”, Ph.D. Thesis, University of Warwick, England (2009).
- AM350, ADC Bioscientific Ltd, UK. Retrieved from www.adc.co.uk (2015).
- Arivazhagan S., Ganesan L. and Priyal S. P., “Texture classification using Gabor wavelets based rotation invariant features”, Pattern Recognition Letters, **27(16)**, 1976 (2006).
- Bajcsy R. and Kovacic C., "Multiresolution Elastic Matching", Comp. Vision, Graphics and Image Processing, **46(1)**, 1(1989).
- Bauman P. A., Weed Identification: Using Plant Structures as a Key, Texas Agriculture System (1999). Source: <http://www.cnr.uidaho.edu/rem252/TAMU-Plant-Parts-Guide.pdf>
- Benco M. and Hudec R.,”Novel Method for Color Textures Features Extraction Based on GLCM”. Radioengineering. **16(4)**, 64 (2007).
- Blachnik M., Duch W., Kachel A. and Biesiada, J., Feature Selection for Supervised Classification: A Kolmogorov-Smirnov Class Correlation-Based Filter. In Proc. Methods of Artificial Intelligence, Gliwice, Nov. 10-19 (2009). p. 33.
- Biva S., “Classification of plants using images of their leaves”, M.S. Thesis, Appalachian State University, United States (2010).
- Brownlee J., A tour of Machine Learning Algorithms. Retrieved from <http://machinelearningmastery.com/a-tour-of-machine-learning-algorithms> (2013).
- Burks T. F., Shearer S. A. and Payne F. A., “Classification of Weed Species using Color Texture Features and Discriminant Analysis”, American Society of Agricultural Engineers, **43(2)**, 441 (2000).
- Bylesjo M. et al., "LAMINA: a tool for rapid quantification of leaf size and shape parameters", BMC Plant Biology, **8**, 1 (2008).
- Casanova D., Junior J. J. M., and Bruno O. M., “Plant Leaf Identification Using Gabor Wavelets”, International Journal of Imaging Systems and Technology, **19 (3)**, 236 (2009). doi: 10.1002/ima.20201
- Castellano G., Bonilha L., Li L. M. and Cendes F.,”Texture Analysis of Medical images”, Clinical Radiology, **59(12)**, 1061 (2004).

Chaki J., Parekh R. and Bhattacharya S., "Plant leaf recognition using texture and shape features with neural classifier", Pattern Recognition Letter, **58**, 61 (2015).

Curcio C. A., Sloan K. R., Kalina R. E. and Henderickson A. E., "Human Photo-Receptor Topography", The J. of Comparative Neurology, **292**, 497 (1990).

Cope J. S., Remagnino P., Barman S., and Wilkin P., Plant Texture Classification Using Gabor Co-Occurrences. In Proc. ISVC, Part-II, LNCS 6454, USA. Nov. 29-Dec. 1 (2010), p. 669.

Cope J. S., Corney D., Clark J. Y., Remagnino P. and Wilkin P., "Plant species identification using digital morphometrics: A review", Expert Systems with Applications, **39(8)**, 7562 (2012).

Database from Caltech, Retrieved from http://imagej.nih.gov/ij/http://www.vision.caltech.edu/Image_Datasets/leaves/leaves.tar (2014).

Database from Oxford, Retrieved from <http://www.plantphenotyping.org/CVPPP2014-dataset> (2014)

Database from UCI, Retrieved from <https://archive.ics.uci.edu/ml/machinelearning-databases/00288/leaf.zip> (2014).

Devroye L., Györfi L. and Lugosi G. (Eds). A Probabilistic Theory of Pattern Recognition. Berlin: Springer-Verlag (1996).

Dins Lab, Random Forest. Retrieved from <https://dinsdalelab.sdsu.edu/metag.stats/code/randomforest.html> (2015).

Direkoğlu C. and Nixon M. S., "Image-based Multiscale Shape Description using Gaussian Filter", In Proc. Computer Vision, Graphics & Image Processing, Southampton. Dec. 16-19, (2008), p. 673.

Duda R. O. and Hart P.E. (Eds). Pattern classification and Scene Analysis, New York, NY: John Wiley & Sons (1973).

Ehsanirad A., "Plant Classification Based on Leaf Recognition", I. J. of Comp. Sci. and Information Security, **8(4)**, 78 (2010).

Fazel A. and Chakrabartty S, "An overview of statistical pattern recognition techniques for speaker verification", Circuits and Systems Magazine, IEEE, **11(2)**, 62 (2011).

Fliegner S., Luke M., and Gumbsch P., "3D microstructure modeling of long fiber reinforced thermoplastics", Composites Science and Technology, **104**, 136(2014).

Fongaro L. and Kvaal K., "Surface texture characterization of an Italian pasta by means of univariate and multivariate feature extraction from their texture images", *Food Research International*, **51(2)**, 693 (2013).

Fongaro L., Lucisano M. and Mariotti M., Assessment of Surface aspects of foods using ImageJ plugins. In proceedings of the ImageJ User and Developer Conference, Luxembourg. October 24-26 (2012), p. 245.

Fongaro L. and Kvaal K., "Surface texture characterization of an Italian pasta by means of univariate and multivariate feature extraction from their texture images", *Food Research International*, **51(2)**, 693 (2013).

Fu K. S. *Syntactic Methods in Pattern Recognition*. New York, NY: Academic Press (1974).

Fujita H. and Mochizuki A., "The Origin of the Diversity of Leaf Venation Pattern", *Development dynamics*, **235(10)**, 2710 (2006).

Gabor Filters. Retrieved from <https://en.wikipedia.org> (2015).

Gao J., Peng J. Y. and Li Z., Application of Improved PSO-SVM Approach in Image Classification. In Proc. Symposium on Photonics and Optoelectronic, Chengdu, China. June 19-21 (2010), p. 1.

Gebejes A. and Huertas R. Texture Characterization based on Gray-Level Co-occurrence Matrix. In Proc. I. Conference of Informatics and Management Sciences, Italy. March 25-29 (2013). p. 375.

Geneve R., Introduction to Plant Identification. Retrieved from <http://dept.ca.uky.edu/PLS220/taxonomymainpage.pdf> (2008).

Gong P., Marceau D. J. and Howarth P. J., "A comparison of Spatial feature extraction algorithms for Land Use classification with SPOT-HR Data", *Remote Sensing of Environment*(Elsevier), **40(2)**, 137 (1992).

Gonzalez R. C. and Woods R. E. (Eds.) *Digital Image Processing*, New Jersey: Prentice Hall (2001).

Graham J. and Pratt L. M., Application of the Fourier-Mellin transform to translation-, rotation and Scale-invariant plant leaf identification. Retrieved from http://digitool.Library.McGill.CA:80/R/?func=dbinjumpfull&object_id=33440&silolibrary=GEN01

Gutierrez R., *Pattern Recognition*. Retrieved from http://www.research.cs.tamu.edu/prism/lectures/pr/pr_19.pdf (2013).

- Hall M.A. , "Correlation-based Feature Selection for Machine Learning," Ph. D. Thesis, University of Waikato, Hamilton, New Zealand (1999).
- Hall M., Frank E., Holmes G., Pfahringer B., Reutemann and Witten I. H. The WEKA Data Mining Software: An Update. ACM SIGKDD Explorations, **11** (1), 10 (2009).
- Haralick R.M., " Statistical and Structural Approaches to Texture", IEEE, **67**(5), 786 (1979).
- Haralick R.M., Shanmugam K. and Dinstein I., "Textural Features for Image Classification", IEEE Transactions, **3**(6), 610 (1973).
- Hati S., Sajeevan G., "Plant Recognition from Leaf Image through Artificial Neural Network", I. J. of Comp. App., **62**(17), 15 (2013).
- Hossain J. and Amin M. A. Leaf shape identification based plant biometrics. In Proc. 13th International Conference on Computer and Information Technology, IEEE Xplore Press, Dhaka, Bangladesh. Dec. 23-25 (2010). p. 458. doi: 10.1109/ICCITECHN.2010.5723901
- Islam M. M., Zhang D. and Lu G. A geometric method to compute directionality features for texture images. Retrieved from www.users.monash.edu.au/~dengs/resource/papers/icme08.pdf (2015).
- Jain A. K., Duin R. P. W. and Mao J., "Statistical Pattern Recognition: A Review", IEEE Transactions on Pattern Analysis and Machine Intelligence, **22**(1), 4 (2000).
- Ji-Xiang D., Xiao-Feng W. and Guo-Jun Z., "Leaf Shape based Plant Species Recognition", Applied Mathematics and Computation, **185**(2), 883 (2007).
- Joshi A., Ramakrishnan N., Houstis E. N. and Rice J. R., "On neurobiological, Neuro-Fuzzy, Machine Learning and Statistical Pattern Recognition Techniques", IEEE Transactions on Neural Networks, 8(1), 18 (1997).
- Kadir A., "Leaf Identification Using Fourier Descriptors and Other Shape Features", Gate to Comp. Vision and Pattern Recognition, 1(1), 3 (2015). doi:10.15579/gtcvpr.0101.003007.
- Kalyoncu C. and Toygar O., "Geometric leaf classification", Comp. Vision and Image Understanding, **133**, 102 (2015).
- Kandel A., Fuzzy Techniques in Pattern Recognition. New York, NY: John Wiley and Sons (1982).
- Kass M., Witkin A. and Terzopoulos D., " Snakes, Active Contour Models", I. J. of Comp. Vision, **1**(4), 321 (1988).

Kirchoff B. K., Remington D., Lixin F. and Sadri F., A New Type of Image-Based Key, In Proc. BMEI, China. May 28-30, **1** (2008), p. 825.

Kodituwakku S. R. and Selvarajah S., " Comparison of Color Features for Image Retrieval", Indian J. of Comp. Sci. and Engg., **1(3)**, 207 (2010).

Kothari C. R. and Garg G., Research Methodology, New age International (P) Ltd.: New Delhi (2014).

Kriegman D., Computer Vision I. Retrieved from <https://CSEweb.ucsd.edu/classes/Fa11/cse252A-a/lect2.pdf> (2011)

Kulkarni S. B., Kulkarni R. B., Kulkarni U. P. and Hegadi R. S., " GLCM-Based Multiclass Iris Recognition Using FKNN and KNN", I. J. of Image and Graphics, **14(3)**, 1450010 (2014).

Kumar A., Patidar V., Khazanchi D. and Saini P. An approach to improve the classification accuracy of leaf images with dorsal and ventral sides by adding directionality features with statistical feature sets. Choudhary R. K., Mandal J. K., Auluck N. and Nagarajaram H. A. (Eds.). In Springer Series on Advanced Computing and Communication Technologies **452** (2016). ISBN: 978-981-10-1021-7. [In Press]

Kumar A., Patidar V., Khazanchi D. and Saini P., "An approach to improve classification accuracy of leaf images using dorsal and ventral features", International Journal of Advanced Comp. Science and Applications, **6(9)**, 130 (2015).

Kumar A., Patidar V., Khazanchi D., and Saini P., "Optimizing feature selection using Particle Swarm Optimization and utilizing ventral sides of leaves for plant leaf classification". In Proc. of ICDMW-2016, India. Aug. 19-21, 2016. [Accepted]

Kumar A., Patidar V., Khazanchi D. and Saini P., "Role of Feature Selection on Leaf Image Classification", Journal of Data Analysis and Information Processing, **3(4)**, 175 (2015).

Kumar A., Patidar V., Khazanchi D. and Saini P., "Ventral side of a Leaf Image: Another Alternative for Leaf Image Classification", International Journal of Computer Science Issues, **12(6)**, 113 (2015).

Kumar N. et al., Leafsnap: A Computer Vision System for Plant Species Identification. In Proc. Computer Vision-ECCV, Italy. Oct. 7-13 (2012). p. 502.

Kyrki V. and Kamarainen J. k., "Simple Gabor feature space for invariant object recognition", Pattern Recognition Letters, **25(3)**, 311 (2004).

Lee C. L., and Chen S. Y., "Classification of leaf images." *I. J. of Imaging Systems and Technology*, **16(1)**, 15 (2006).

Lee W. S. and Slaughter D. C., "Recognition of Partially occluded Leaves using watershed Modified algorithms", *American Society of Agriculture Engineers*, **47(4)**, 1269 (2004).

Li Z., An Q. and Ji C. Classification of Weed Species using Artificial Neural Networks based on Color Leaf Texture Feature. D. Li, and Z. Chunjiang(Eds.),In *Computer and Computing Technologies in Agriculture-II*,(pp. 1217-1225). Boston: Springer(2009).

Li F. F., *Computer Vision*. Retrieved from <http://www.cs.princeton.edu/courses/archive/fall08/cos429/outline.html> (2008).

Liu H. and Motoda H. (Eds.), *Feature Selection for Knowledge Discovery and Data Mining*. New York: Kluwer Academic Publishers. Retrieved from <http://dx.doi.org/10.1007/978-1-4615-5689-3> (1998)

Liu H. and Setiono R., Chi2: Feature Selection and Discretization of Numeric Attributes, In *Proc. of the Seventh IEEE International Conference on Tools with Artificial Intelligence*, Herndon, Virginia. November 5-8 (1995), p. 388.

Liu Z. Q., "Scale space approach to directional analysis of images", *J. Applied Optics*, **30(11)**, 1369 (1991).

Lu H., Jiang W., Ghiassi M., Lee S., and Mantri N. , Classification of Camellia (Theaceae) Species Using Leaf Architecture Variations and Pattern Recognition Techniques, *PLoS ONE*, **7(1)**, e29704. doi:10.1371/journal.pone.0029704 (2012).

Materka A. and Strzelecki M., *Texture Analysis Methods-A Review*, COST B11 Report, Technical University of Lodz, Institute of Electronics, Brussels (1998).

McNeill G. and Sethu V. K., 2D Shape Classification and Retrieval, In *Proc. IJCAI*, Edinburgh. July 31-August 5 (2005), p. 1483.

Meade, C., and Parnell, J. "Multivariate analysis of leaf shape patterns in Asian species of the Uvaria group(Annonaceae)", *Botanical J. of the Linnean Society*, **143**, 231 (2003).

Megchelenbrink W., "Relief-based Feature Selection in Bioinformatics: Detecting Functional Specificity Residues from multiple sequence Alignments", Master's thesis, Radboud University, Nijmegen (2010).

Michels D. L. , Giesselbach S. A., Werner T. and Steinhage V. Feature Extraction for Fingerprinting Grapevine Leaves. In *Proc. IPCV, USA*. July 23-25 (2013).

- Mingqiang Y., Kidiyo K. and Joseph R. A survey of shape feature extraction techniques. P. Y. Yin (Eds.), In *Pattern Recognition Techniques, technology and applications*, (pp. 43-90), Viana, Austria: InTech (2008).
- Mokhtarian F. and Abbasi S., "Matching Shapes With Self-Intersections: Application to Leaf Classification", *IEEE transactions on image processing*, **13(5)**, 653 (2004).
- Neto J. C., Meyer G. E., Jones D. D. and Samal A. K., "Plant species identification using Elliptic Fourier leaf shape analysis", *Computers and Electronics in Agriculture*, **50(2)**, 121 (2006).
- Nikam S. B. and Agarwal S., "Co-occurrence probabilities and Wavelet-Based Spoof Fingerprint Detection", *I. J. of Image and Graphics*, **9(2)**, 171 (2009).
- Oliveira M. S., Fernandes P. T., Avelar W. M., Santos S. L. M., Castellano G. and Li L. M., "Texture analysis of computed tomography images of acute ischemic stroke patients", *Braz. J. Med. Biol. Research*, **42(11)**, 1076 (2009).
- Omaran M. G. H., *Particle Swarm Optimization Methods for Pattern Recognition and Image Processing*, PhD Thesis, University of Pretoria, Pretoria (2004).
- Pantic I., Pantic S., Paunovic J. and Perovic M., "Nuclear entropy, angular second moment, variance and texture correlation of thymus cortical and medullar lymphocytes: Grey level co-occurrence matrix analysis", *Anais of the Brazilian Academy of Sciences*, **85(3)**, 1063 (2013).
- Pavlidis T., *Structural Pattern Recognition*. New York, NY: Springer Verlag (1997).
- Perez A. J., Lopez F., Benlloch J. V. and Christensen S., "Color and shape analysis techniques for weed detection in cereal fields", *Comput. Electron. Agric.*, **25(3)**, 197 (2000).
- Petty E. M., "Shape Analysis in Bioinformatics", Ph.D. Thesis, University of Leeds, England (2009).
- Poli R., Kennedy J. and Blackwell T., "Particle swarm optimization: An overview", *Swarm Intelligence*, **1(1)**, 33 (2007).
- Pratt J. G. M., *Application of the Fourier-Mellin transform to translation- rotation and Scale-invariant plant leaf identification*. M.S. Thesis, McGill University, Montreal, July 2000.
- R Development Core Team, *R: A language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna (2008).
- Rajasekar S. , Philominathan P. and Chinnathambi V., *Research Methodology* (2013). Retrieved from <http://arxiv.org/pdf/physics/0601009.pdf>

Rampun A., Strange H. and Zwiggelaar R., Texture segmentation using different orientations of GLCM features, In Proc. of the 6th I. Conf. on Comp. Vision/Comp. Graphics Collaboration Techniques and App., Berlin. June 6-7 (2013). p. 17.

Rana S., Jasola S. and Kumar R., "A review on particle swarm optimization algorithms and their applications to data clustering", *Artif Intell Rev*, **35**, 211 (2011).

Random Forest. Retrieved from <http://www.bios.unc.edu/~dzeng/BIOS740/randomforest.pdf> (2015).

Rasband W.S., ImageJ. U. S. National Institutes of Health, Bethesda (1997-2014).

Rao R., Computer Vision. Retrieved from <https://courses.cs.washington.edu/courses/cse455/09wi/lects/lect1.pdf> (2009).

Romanski P., FSelector: Selecting attributes. R package version 0.19. Retrieved from <http://CRAN.R-project.org/package=Fselector> (2013)

Rosenfeld A. and Troy E. Visual texture analysis. Technical Report, Computer Sci. Cent., University of Maryland, College Park, USA (1970).

Samuel A., "Some Studies in Machine Learning Using the Game of Checkers", *IBM Journal*, **3**, 211 (1959).

Sari C., Akgul C. B. and Sankur B., Shape Based Leaf Recognition, In Proc. SIU, Haspolat. April 24-26 (2013), p. 1.

Shardlow M. An analysis of feature selection techniques. Retrieved from <https://studentnet.cs.manchester.ac.uk/pgt/COMP61011/goodProjects/Shardlow.pdf> (2015)

Shrestha B., "Classification of plants using images of their leaves", M.S. Thesis, Appalachian State University, United States (2010).

Sim J., and Wright C. C., "The Kappa statistic in reliability studies: use, interpretation, and sample size requirements", *Physical Therapy*, **85(3)**, 257 (2005).

Soderkvist O. J. O., "Computer Vision Classification of Leaves from Swedish Trees", Masters' Thesis, Linköping University, Sweden (2001).

Soh L. K. and Tsatsoulis C., "Texture analysis of SAR sea ice imagery using gray level co-occurrence matrices", *IEEE Transactions on Geoscience and Remote Sensing*, **37(2)**, 780 (1999).

Sumathi C. S., "Identification of Arable and Tree Crops by Edge and Texture Fusion Techniques", *I. J. of Comp. Engg. and Tech.*, **4(6)**, 167 (2013).

- Sumathi C. S. and Kumar A. V. S., "Edge and Texture Fusion for Plant Leaf Classification", I. J. of Comp. Sci. and Telecommunications, **3(6)**, 6 (2012).
- Sumathi C. S., and Kumar A. V. S., "Plant Leaf Classification Using Soft Computing Techniques", I. J. of Future Comp. and Communication, **2(3)**, 196 (2013).
- Szeliski R., Computer Vision: Algorithms and Applications, London: Springer Verlag London Ltd. (2011).
- Szeliski R. and Coughlan J. Hierarchical Spline Based Image Registration. In Proc. Computer Vision and Pattern Recognition, Seattle, Washington. June 20-23 (1994). p. 194.
- Tamura H, Mori S, Yamavaki T. Textural features corresponding to visual perception. IEEE Trans on Systems, Man and Cybernetics, **8**, 460 (1978).
- Texture. Retrieved from http://www.tutorialsforblender3d.com/Textures/Textures_index.html (2015)
- Texture Patterns. Retrieved from <http://www.featurepics.com/online/Fresco-Tiles-Pattern-1099135.aspx>
- Troy E. B., Deutsch E. S. and Rosenfeld A., Gray-level manipulation experiments for texture analysis, IEEE Trans. Systems, Man and Cybernetics, **SMC-3(1)**, 91 (1973).
- Tuceryan M. and Jain A. K., Texture Analysis. Chen C. H., Pau L. F. and Wang P. S. P.(Eds.). In Handbook of Pattern Recognition and computer Vision (pp 235-276), NJ, USA: World Scientific Publishing Co. (1993).
- Tumer K. and Ghosh J., "Analysis of decision boundaries in linearly combined neural classifiers", Pattern Recognition, **29(2)**, 341 (1996).
- Viera A. J., and Garrett J. M., "Understanding interobserver agreement: The Kappa statistic", Family Medicine, **37(5)**, 360 (2005).
- Wei T. Corrplot: Visualization of a correlation matrix. R package version 0.73. 2013. Retrieved from: URL: <http://CRAN.R-project.org/package=corrplot>.
- White M., Machine Learning, ECE591Q, Lecture Slides, Fall 2005.
- Wiebe J., Gender Identification from Video sequences, MS Thesis in Engineering Mathematics, Chalmers University of Technology, Gothenburg, Sweden (2014).

Wikimedia Foundation Inc., Gabor Filters. Retrieved from https://en.wikipedia.org/wiki/Gabor_filter (2015).

Woolley A. J., Desai H. A., Steckbeck M. A., Patel N. K. and Otto K. J., "In situ characterization of the brain–microdevice interface using Device Capture Histology", In *J. of Neuroscience Methods*, **201(1)**, 67(2011).

Wu P., Ro Y. M., Won C. S. and Choi Y. Texture descriptors in MPEG-7. In *Proc. CAIP, Poland*. Sept. 5-7(2001). p. 21.

Yang M., Kpalma K. and Ronsin J., "A survey of shape feature extraction techniques", *Pattern Recognition*, 43(2008).

Yang X., Tridandapani S., Beitler J. J., Yu D. U. and Yoshida E. J., "Ultrasound GLCM texture analysis of radiation-induced parotid-gland injury in head-and-neck cancer radiotherapy: An in vivo study of late toxicity", *Medical Physics*, **39(9)**, 5732 (2012).

Yegnanarayana B., "Artificial Neural Networks for Pattern Recognition", *Sadhana*, **19(2)**, 189 (1994).

Yu L. and Liu H., "Efficient Feature Selection via Analysis of Relevancy and Redundancy", *J. of Machine Learning Research*, **5**, 1205 (2004).

Yu W. and Chiu D. (Eds.). *Machine Learning with R Cookbook*, Birmingham: Packt Publishing Ltd. (2015) .

Zhang D., Wong A., Indrawan M. and Lu G. Content-based Image Retrieval Using Gabor Texture Features. In *Proc. IEEE Pacific-Rim Conference on Multimedia*, Australia. Dec. 13-15 (2000). p 91.

Zhang F. and Zhang X., "Classification and Quality Evaluation of Tobacco Leaves Based on Image Processing and Fuzzy Comprehensive Evaluation", *Sensors*, **11(3)**, 2369 (2011).

Zhang H., Yanne P., and Liang S., Plant Species Classification using Leaf shape and Texture. In *Proc. ICICEE, China*. Aug. 23-25 (2012), p. 2025.