

List of Publications (most recent first)

Books

- B6. McLachlan, G.J. and Krishnan, T. (2008). *The EM Algorithm and Extensions*. Second Edition. Hoboken, New Jersey: Wiley. xxvii + 359 pp.
- B5. McLachlan, G.J., Do, K.-A., and Ambroise, C. (2004). *Analyzing Microarray Gene Expression Data*. Hoboken, New Jersey: Wiley. xx + 320 pp.
- B4. McLachlan, G.J. and Peel, D. (2000). *Finite Mixture Models*. New York: Wiley. xxii + 419 pp.
- B3. McLachlan, G.J. and Krishnan, T. (1997). *The EM Algorithm and Extensions*. New York: Wiley. xvii + 274 pp.
- B2. McLachlan G.J. (1992). *Discriminant Analysis and Statistical Pattern Recognition*. New York: Wiley. xv + 526 pp.
- B1. McLachlan G.J. and Basford, K.E. (1988). *Mixture Models: Inference and Applications to Clustering*. New York: Marcel Dekker. xi + 259 pp.

Book Chapters

- BC18. McLachlan, G.J. and Baek, J. (2009). Mixtures of factor analyzers for the clustering and visualisation of high-dimensional data. In *Advances in Latent Class Analysis; A Festschrift in Honour of Professor C. Mitchell*, Dayton, G. Hancock and G. Macready (Eds.). To appear.
- BC17. McLachlan, G.J., Flack, L., Ng, S.K., and Wang, K. (2009). Clustering of gene-expression data via normal mixture models. In *Statistical Methods for Microarray Data*, A.Y. Yakovlev, L. Klebanov, and D. Gaile (Eds.). Totowa, New Jersey: Humana Press. To appear.
- BC16. Flack, L.K. and McLachlan, G.J. (2009). Clustering methods for gene-expression data. In *Handbook of Research on Systems Biology Applications in Medicine*, A. Daskalaki (Ed.). Hershey, Pennsylvania: Idea Group Publishing, pp. 209–220.
- BC15. Le Cao, K.-A. and McLachlan, G.J. (2009). Statistical analysis of microarray data: selection of gene prognosis signature. In *Computational Biology: Issues and Applications in Oncology*, T. Pham (Ed.). New York: Springer-Verlag. To appear.
- BC14. McLachlan, G.J. (2009). Unsupervised data mining: statistical model-based clustering. In *Comprehensive Chemometrics: Chemical and Biochemical Data Analysis* Vol. 2, S. Brown, R. Tauler, and R. Walczak (Eds.). Oxford: Elsevier, pp. 655-681.
- BC13. McLachlan, G.J. and Baek, J. (2009). Clustering of high-dimensional data via finite mixture models. In *Studies in Classification, Data Analysis, and Knowledge Organization*. Berlin: Springer-Verlag. To appear.

- BC12. McLachlan, G.J. and Ng, S.K. (2009). The EM algorithm. In *The Top-Ten Algorithms in Data Mining*, X. Wu and V. Kumar (Eds.). Boca Raton, Florida: Chapman & Hall/CRC.
- BC11. McLachlan, G.J., Ng, S.K., and Wang, K. (2009). Clustering of high-dimensional and correlated data. In *Data Analysis and Classification: from the exploratory to the confirmatory approach*, C. Lauro, F. Palumbo, and M. Greenacre (Eds.). Berlin: Springer-Verlag. To appear.
- BC10. Ng, S.K. and McLachlan, G.J. (2009). Expert networks with mixed continuous and categorical feature variables: a location modeling approach. In *Machine Learning Research Progress*, H. Peters and M. Vogel (Eds.). Hauppauge, New York: Novinka Books, pp. 1–14.
- BC9. McLachlan, G.J., Bean, R., and Ng, S.K. (2008). Clustering of microarray data via mixture models. In *Statistical Advances in Biomedical Sciences: Clinical Trials, Epidemiology, Survival Analysis, and Bioinformatics*, A. Biswas, S. Datta, J.P. Fine, and M.R. Segal (Eds.). Hoboken, New Jersey: Wiley, pp. 365–384.
- BC8. McLachlan, G.J., Chevelu, J., and Zhu, J. (2008). Correcting for selection bias via cross-validation in the classification of microarray data. In *Beyond Parametrics in Interdisciplinary Research: A Festschrift to P.K. Sen*, N. Balakrishnan, E. Pena, and M.J. Silvapulle (Eds.). Hayward, California: IMS Lecture Notes-Monograph Series, pp. 383–395.
- BC7. Ben-Tovim Jones, L., Ng, S.K., Ambroise, C., Monico, K., Khan, N., and McLachlan, G.J. (2005). Use of microarray data via model-based classification in the study and prediction of survival from lung cancer. *Methods of Microarray Data Analysis IV*, J.S. Shoemaker and S.M. Lin (Eds.). New York: Springer, pp. 163–173.
- BC6. Ng, S.K., Krishnan, T., and McLachlan, G.J. (2004). The EM algorithm. In *Handbook of Computational Statistics Vol. 1*, J. Gentle, W. Hardle, and Y. Mori (Eds.). New York: Springer-Verlag, pp. 137–168.
- BC5. McLachlan, G.J., Ng, S.K., and Peel, D. (2003). On clustering by mixture models. In *Studies in Classification, Data Analysis, and Knowledge Organization: Exploratory Data Analysis in Empirical Research*, O. Opitz and M. Schwaiger (Eds.). Berlin: Springer-Verlag, pp. 141–148.
- BC4. McLachlan G.J. (1995). Mixtures—models and applications. In *the Exponential Distribution: Theory, Methods, and Applications*, N. Balakrishnan and A.P. Basu (Eds.). Basel: Gordon & Breach, pp. 307–315.
- BC3. McLachlan G.J. (1987). Error rate estimation in discriminant analysis: recent advances. In *Advances in Multivariate Statistical Analysis* (A.K. Gupta, ed.), pp.233–252, Dordrecht: Reidel.
- BC2. McLachlan G.J. (1986). Assessing the performance of an allocation rule. *Computers & Mathematics with Applications* **12A**, 261–272. Reprinted in *Statistical Methods of Discrimination and Classification: Advances in Theory and Applications*, S.C. Choi (Ed.). New York: Pergamon Press, pp. 261–272.

- BC1. McLachlan G.J. (1982). The classification and mixture maximum likelihood approaches to cluster analysis. In *Handbook of Statistics* Vol. 2, P.R. Krishnaiah and L. Kanal (Eds.). Amsterdam: North-Holland, pp. 199–208.

Invited Encyclopaedic Contributions

- E2. McLachlan, G.J. (2007). Discriminant analysis. In *The Encyclopedia of Measurement and Statistics* Vol. 1, N.J. Salkind (Ed.). Thousand Oaks, California: Sage, pp. 267–270.
- E1. McLachlan, G.J. (2001). Multivariate analysis: Classification and discriminant analysis. In *International Encyclopedia of Social and Behavioral Sciences* Vol. 15, N.J. Smelser and P.B. Baltes (Eds.). Oxford: Elsevier Science, pp. 10214–10218.

Journal Papers (Refereed)

- J134. McLachlan, G.J., Wang, K., and Ng, S.K. (2009). Large-scale simultaneous inference with applications to the detection of differential expression with microarray data (with discussion). *Statistica* **68**. To appear.
- J133. Pyne, S., Hu, X., Wang, K., Rossin, E., Lin, T.-I., Maier, L.M., Baecher-Allan, C., McLachlan, G.J., Tamayo, P., Hafler, D.A., De Jager, P.L., and Mesirov, J.P. (2009). Automated high-dimensional flow cytometric data analysis. *Proceedings of the National Academy of Sciences USA* **106**. To appear.
- J132. Suarez, E., Burguete, A., and McLachlan, G.J. (2009). Microarray data analysis for differential expression: a tutorial. *Puerto Rico Journal of Health Science*. To appear.
- J131. Zhao, Y., Lee, A.H., Yau, K.K.W., Burke, V., and McLachlan, G.J. (2009). A score test for assessing the cured proportion in the long-term survivor mixture model. *Statistics in Medicine*. To appear.
- J130. Capranica, C.C., O'Brien, E., and McLachlan, G.J. (2008). of loading events on short to medium span bridges. *Structural Safety* **30**, 394–404.
- J129. Jorgensen, M.A. and McLachlan, G.J. (2008). Wallace's approach to unsupervised learning: the Snob program. *Computer Journal* **51**, 571–578.
- J128. McLaren, C.E., Gordeuk, V.R., Chen, W.-P., Barton, J.C., Acton, R.T., Speechley, M., Castro, O., Adams, P.C., Snively, B.M., Harris, E.M., Reboussin, D.M., McLachlan, G.J., and Bean, R. (2008). Bivariate mixture modeling of transferrin saturation and serum ferritin concentration in Asians, African Americans, Hispanics, and whites in the Hemochromatosis and Iron Overload Screening (HEIRS) Study. *Translational Research* **151**, 97–109.
- J127. Wu, X., Kumar, V., Quinlan, J.R., Ghosh, J., Yang, Q., Motoda, H., McLachlan, G.J., Ng, S.K., Liu, B., Yu, P.S., Zhou, Z.-H., Steinbach, M., Hand, D.J., and Steinberg, D. (2008). Top 10 algorithms in data mining. *Knowledge and Information Systems* **14**, 1–37.
- J126. Zhu, J.X., McLachlan, G.J., Ben-Tovim, L., and Wood, I. (2008). On selection biases with prediction rules formed from gene expression data. *Journal of Statistical Planning and Inference* **38**, 374–386.

- J125. Baek, J., Son, Y.S., and McLachlan, G.J. (2007). Segmentation and intensity estimation of microarray images using a gamma- t mixture model. *Bioinformatics* **23**, 458–465.
- J124. Do, K.-A., McLachlan, G.J., Bean, R.W., and Wen, S. (2007). Application of gene shaving and mixture models to cluster microarray gene expression data. *Cancer Informatics* **2**, 1–19.
- J123. Lee, A.H., Wang, K., Yau, K.K.W., McLachlan, G.J., and Ng, S.K. (2007). Maternity length of stay modelling by gamma mixture regression with random effects. *Biometrical Journal* **49**, 750–764.
- J122. Lenzenweger, M.F., McLachlan, G.J., and Rubin, D.B. (2007). Resolving the latent structure of schizophrenia endophenotypes using EM-based finite mixture modeling. *Journal of Abnormal Psychology* **116**, 16–29.
- J121. McLachlan, G.J., Bean, R.W., and Ben-Tovim Jones, L. (2007). Extension of the mixture of factor analyzers model to incorporate the multivariate t distribution. *Computational Statistics and Data Analysis* **51**, 5327–5338.
- J120. Ng, S.K. and McLachlan, G.J. (2007). Extension of mixture-of-experts networks for binary classification of hierarchical data. *Artificial Intelligence in Medicine* **41**, 57–67.
- J119. Nikulin, V. and McLachlan, G.J. (2007). Merging algorithm to reduce dimensionality in application to web-mining. *Lecture Notes in Artificial Intelligence* **4830**, 755–761.
- J118. Suarez, E., Sariol, C.A., Burguete, A., and McLachlan, G.J. (2007). A tutorial in genetic epidemiology and some considerations in statistical modeling. *Puerto Rico Journal of Health Science* **26**, 401–421.
- J117. Wang, K., Yau, K.K.W., Lee, A.H., and McLachlan, G.J. (2007). Two-component Poisson mixture regression modelling of count data with bivariate random effects. *Mathematical and Computer Modelling* **46**, 1468–1476.
- J116. Wang, K., Yau, K.K.W., Lee, A.H., and McLachlan, G.J. (2007). Multilevel survival modelling of recurrent urinary tract infections. *Computer Methods and Programs in Biomedicine* **87**, 225–229.
- J115. Xiang, L., Lee, A.H., Yau, K.K.W., and McLachlan, G.J. (2007). A score test for overdispersion in zero-inflated Poisson mixed regression model. *Statistics in Medicine* **26**, 1608–1622.
- J114. Ben-Tovim Jones, L., Bean, R.W., McLachlan, G.J., and Zhu, J.X. (2006). Mixture models for detecting differentially expressed genes in microarrays. *International Journal of Neural Systems* **16**, 353–362.
- J113. Lee, A.H., Wang, K., Scott, J.A., Yau, K.K.W., and McLachlan, G.J. (2006). Multilevel zero-inflated Poisson regression modelling of correlated count data with excess zeros. *Statistical Methods in Medical Research* **15**, 47–61.
- J112. McLachlan, G.J., Bean, R.W., and Ben-Tovim Jones, L. (2006). A simple implementation of a normal mixture approach to differential gene expression in multiclass microarrays. *Bioinformatics* **22**, 1608–1615.

- J111. McLachlan, G.J., Ng, S.K., and Bean, R. (2006). Robust cluster analysis via mixture models. *Austrian Journal of Statistics* **35**, 157–174.
- J110. Ng, S.K., McLachlan, G.J., and Lee, A.H. (2006). An incremental EM-based learning approach for on-line prediction of hospital resource utilization. *Artificial Intelligence in Medicine* **36**, 257–267.
- J109. Ng, S.K., McLachlan, G.J., Wang, K., Ben-Tovim, L., and Ng, S.W. (2006). A mixture model with random-effects components for clustering correlated gene-expression profiles. *Bioinformatics* **22**, 1745–1752.
- J108. Xiang, L., Lee, A.H., Yau, K.K.W., and McLachlan, G.J. (2006). A score test for zero-inflation in correlated count data. *Statistics in Medicine* **25**, 1660–1670.
- J107. Zhu, X., Ambroise, C., and McLachlan, G.J. (2006). Selection bias in working with the top genes in supervised classification of tissue samples. *Statistical Methodology* **3**, 29–41.
- J106. Bean, R.W. and McLachlan, G.J. (2005). Cluster analysis of high-dimensional data: a case study. *Lecture Notes in Computer Science* **3578**, 302–310.
- J105. Ben-Tovim Jones, L., Bean, R.W., McLachlan, G.J., and Zhu, J. (2005). Application of mixture models to detect differentially expressed genes. *Lecture Notes in Computer Science* **3578**, 422–431.
- J104. Kerr, R.J., McLachlan, G.J., and Henshall, J.M. (2005). Use of the EM algorithm to detect QTL affecting multiple-traits in a n across half-sib family analysis. *Genetics Selection Evolution* **37**, 83–103.
- J103. McLachlan, G.J., Bean, R.W., Ben-Tovim Jones, L., and Zhu, X. (2005). Using mixture models to detect differentially expressed genes. *Australian Journal of Experimental Agriculture* **45**, 859–866.
- J102. Ng, S.K. and McLachlan, G.J. (2005). Normalized Gaussian networks with mixed feature data. *Lecture Notes in Artificial Intelligence* **3809**, 879–882.
- J101. McLachlan, G.J. and Chang, S.U. (2004). Mixture modelling for cluster analysis. *Statistical Methods in Medical Research* **13**, 347–361.
- J100. McLachlan, G.J. and Khan, N. (2004). On a resampling approach for tests on the number of clusters with mixture model-based clustering of tissue samples. *Journal of Multivariate Analysis* **90**, 90–105.
- J99. Ng, S.K. and McLachlan, G.J. (2004). Using the EM algorithm to train neural networks: misconceptions and a new algorithm for multiclass classification. *IEEE Transactions on Neural Networks* **15**, 738–749.
- J98. Ng, S.K. and McLachlan, G.J. (2004). Speeding up the EM algorithm for mixture model-based segmentation of magnetic resonance images. *Pattern Recognition* **37**, 1573–1589.
- J97. Ng, S.K., McLachlan, G.J., Yau, K.K.W., and Lee, A.H. (2004). Modelling the distribution of ischaemic stroke-specific survival time using an EM-based mixture approach with random effects adjustment. *Statistics in Medicine* **23**, 2729–2744.

- J96. Mar, J.C. and McLachlan, G.J. (2003). Model-based clustering in gene expression microarrays: an application to breast cancer data. *International Journal of Software Engineering and Knowledge Engineering* **13**, 579–592.
- J95. McLachlan, G.J., Peel, D., and Bean, R.W. (2003). Modelling high-dimensional data by mixtures of factor analyzers. *Computational Statistics & Data Analysis* **41**, 379–388.
- J94. Ng, S.K. and McLachlan, G.J. (2003). On the choice of the number of blocks with the incremental EM algorithm for the fitting of normal mixtures. *Statistics and Computing* **13**, 45–55.
- J93. Ng, S.K. and McLachlan, G.J. (2003). An EM-based semiparametric mixture model approach to the regression analysis of competing-risks data. *Statistics in Medicine* **22**, 1097–1111.
- J92. Ng, S.K. and McLachlan, G.J. (2003). On some variants of the EM algorithm for the fitting of finite mixture models. *Austrian Journal of Statistics* **32**, 143–161.
- J91. Ambroise, C. and McLachlan, G.J. (2002). Selection bias in gene extraction on basis of microarray gene expression data. *Proceedings of the National Academy of Sciences USA* **99**, 6562–6566.
- J90. Cadez, I.V., Smyth, P., McLachlan, G.J., and McLaren, C.E. (2002). Maximum likelihood estimation of mixture densities for binned and truncated multivariate data. *Machine Learning* **47**, 7–34.
- J89. McLachlan, G.J., Bean, R.W., and Peel, D. (2002). A mixture model-based approach to the clustering of microarray expression data. *Bioinformatics* **18**, 413–422.
- J88. Ng, S.K., O’Brien, M.F., Harrocks, S., and McLachlan, G.J. (2002). The influence of patient age and implantation technique on the probability of re-replacement of the allograft aortic valve. *Journal of Heart Valve Disease* **11**, 217–223.
- J87. Peel, D., Whiten, W.J., and McLachlan, G.J. (2001). Fitting mixtures of Kent distributions to aid in joint set identification. *Journal of the American Statistical Association* **96**, 56–63.
- J86. Rose, S.E., Chalk, J.B., Griffin, M., Janke, A.L., Chen, F., McLachlan, G.J., Peel, D., Zelaya, F.O., Simmons, A., Markus, H.S., Strugnell, W., Doddrell, D., and Semple, J. (2001). MRI based diffusion and perfusion predictive model to estimate stroke evolution. *Magnetic Resonance in Medicine* **19**, 1043–1053.
- J85. McLaren C.E., Kambour, E.L. McLachlan, G.J., Lukaski, H.C., Li, X., Brittenham, G.M., and McLaren, G.D. (2000). Patient-specific analysis of sequential hematological data by multiple linear regression and mixture distribution modeling. *Statistics in Medicine* **19**, 83–98.
- J84. Peel, D. and McLachlan, G.J. (2000). Robust mixture modelling using the t distribution. *Statistics and Computing* **10**, 335–344.
- J83. Welham, J., McLachlan, G.J., Davies, G., and McGrath, J. (2000). Heterogeneity in schizophrenia; mixture modelling of age-at-first-admission, gender and diagnosis. *Acta Psychiatrica Scandinavica* **10**, 312–317.

- J82. McLachlan, G.J. (1999). Mahalanobis distance. *Resonance* **4**, 20–26.
- J81. McLachlan, G.J., Peel, D., Basford, K.E., and Adams, P. (1999). The EMMIX software for the fitting of mixtures of normal and t -components. *Journal of Statistical Software* **4**, No. 2.
- J80. Ng, S.K., McLachlan, G.J., McGiffin, D.C., and O'Brien, M.F. (1999). Constrained mixture models in competing risks problems. *Environmetrics* **10**, 753–767.
- J79. McLachlan, G.J. and Peel, D. (1998). Robust cluster analysis via mixtures of multivariate t -distributions. In *Lecture Notes in Computer Science* **1451**, 658–666.
- J78. McLaren, C.E., McLachlan, G.J., Halliday, J.W., Webb, S.I., Leggett, B.A., Jazwinska, E.C., Crawford, D.H.G., Gordeuk, V.R., McLaren, G.D., and Powell, L.W. (1998). The distribution of transferrin saturation and hereditary haemochromatosis in Australians. *Gastroenterology* **114**, 543–549.
- J77. Ng, S.K. and McLachlan, G.J. (1998). On modifications to the long-term survival mixture model in the presence of competing risks. *Journal of Statistical Computation and Simulation* **61**, 77–96.
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- J75. Basford, K.E., McLachlan, G.J., and York, M.G. (1997). Modelling the distribution of stamp paper thickness via finite normal mixtures: the 1872 Hidalgo stamp issue of Mexico revisited. *Journal of Applied Statistics* **24**, 169–179.
- J74. Hawkins, D.M. and McLachlan G.J. (1997). High-breakdown linear discriminant analysis. *Journal of the American Statistical Association* **92**, 136–143.
- J73. McGiffin, D.C., Galbraith, A.J., O'Brien, M.F., McLachlan, G.J., Naftel, D.C., Adams, P., Reddy, S., and Early, L. (1997). An analysis of valve re-replacement following aortic valve replacement with biological devices. *Journal of Thoracic and Cardiovascular Surgery* **113**, 311–318.
- J72. McLachlan, G.J. (1997). On the EM algorithm for overdispersed count data. *Statistical Methods in Medical Research* **6**, 76–98.
- J71. McLachlan, G.J., Ng, S.K., Adams, P., McGiffin, D.C., and Galbraith, A.J. (1997). An algorithm for fitting mixtures of Gompertz distributions to censored survival data. *Journal of Statistical Software* **2**, No. 7.
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- J68. McLachlan G.J. and Scot, D. (1995). On the asymptotic relative efficiency of the linear discriminant function under partial nonrandom classification of the training data. *Journal of Statistical Computation and Simulation*. **52**, 415–426.
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- J65. McLachlan G.J. and McGiffin, D.C. (1994). On the role of finite mixture models in survival analysis. *Statistical Methods in Medical Research* **3**, 211–226.
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- J63. Shoukri, M.M. and McLachlan G.J. (1994). Parametric estimation in a genetic mixture model with application to nuclear family data. *Biometrics* **50**, 128–139.
- J62. McGiffin, D.C., O'Brien, M.F., Galbraith, A.J., McLachlan, G.J., Stafford, E.G., Gardiner, M.A.H., Pohlner, P.G., Early, L., and Kear, L. (1993). An analysis of risk factors for death and mode-specific death following aortic valve replacement using allograft, xenograft and mechanical valves. *Journal of Thoracic and Cardiovascular Surgery* **106**, 895–911.
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- J60. Jones, P.N. and McLachlan G.J. (1992). Fitting finite mixture models in a regression context. *Australian Journal of Statistics* **34**, 233–240.
- J59. McGiffin, D.C., Galbraith, A.J., McLachlan, G.J., Stower, R.E., Wong, M.C., Stafford, E.G., Gardner, M.A.H., Pohlner, P.G., and O'Brien, M.F. (1992). Aortic valve infection—risk factors for death and recurrent endocarditis following aortic valve replacement. *Journal of Thoracic and Cardiovascular Surgery* **104**, 511–520.
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- J56. McGiffin, D.C. and McLachlan G.J. (1991). The analysis of time-related events after cardiac surgery. *Australian Journal of Cardiac and Thoracic Surgery*. **1**, 11–13.
- J55. O'Brien, M.F., McGiffin, D.C., Stafford, E.G., Gardner, M.A.H., Pohlner, P.G., McLachlan, G.J., Gall, K., Smith, S., and Murphy, E. (1991). Allograft aortic valve replacement: long-term comparative clinical analysis of the viable cryopreserved and antibiotic 4° C stored valves. *Journal of Cardiac Surgery* **6**, 534–543.

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- J53. Jones, P.N. and McLachlan G.J. (1990). Algorithm AS 254. Maximum likelihood estimation from grouped and truncated data with finite normal mixture models. *Journal of the Royal Statistical Society Series C (Applied Statistics)* **39**, 273–282.
- J52. Jones, P.N. and McLachlan G.J. (1989). Modelling mass-size particle data by finite mixtures. *Communications in Statistics - Theory and Methods* **18**, 2629–2646.
- J51. Lawoko, C.R.O. and McLachlan G.J. (1989). Bias associated with the discriminant analysis approach to the estimation of mixing proportions. *Pattern Recognition* **22**, 763–766.
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