

George Alastair Young

CURRICULUM VITAE

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Office Address:

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London SW7 2AZ, United Kingdom, +44 (0)20 7594 8560
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Employment:

2005 – Imperial College London, Chair in Statistics
1998 – 2004 University of Cambridge, Reader in Methodological Statistics
1990 – 1998 University of Cambridge, University Lecturer
1987 – 1990 University of Cambridge, University Assistant Lecturer

Education:

1987 University of Cambridge, PhD. 'Data-based Statistical Methods', Statistical Laboratory
Advisor: David George Kendall
1982 University of Cambridge, Diploma in Mathematical Statistics, with Distinction
1981 University of Edinburgh, B.Sc. in Mathematics and Statistics, First Class Honours

Research Interests:

Contemporary nonparametric inference: resampling methods, bootstrap, nonparametric likelihood.
Parametric statistical theory. Objective Bayes. Approximation methods in statistics. Spatial statistics.

Honors:

2000 Institute of Mathematical Statistics Fellow;

For contributions to contemporary non-parametric methods, particularly algorithms for the bootstrap (e.g. saddlepoint methods), bootstrap methods for confidence procedures, and applications of computer algebra to resampling; and for service to the profession, for example in the roles of editor and associate editor of scholarly journals.

1985 Research Fellowship, Christ's College, University of Cambridge (1985–1989)
1984 J.T. Knight Prize for essay 'Pancakes, Degeneracy and an Anti-symmetric Universe', University of Cambridge
1982 Benefactors' Research Studentship for research in Mathematical Statistics, St. John's College, University of Cambridge (1982–1985)
1982 Tripos Prize, Sidney Sussex College, University of Cambridge
1981 Arthur Erdelyi Prize for Mathematics, University of Edinburgh
1980 Keasbey Memorial Bursary, University of Edinburgh

Publications:

Books

1. Young, G.A. and Smith, R.L. (2005). *Essentials of Statistical Inference*, 225 pages. Cambridge University Press. doi:10.1017/CBO9780511755392

Annals of Statistics

2. Robinson, J., Ronchetti, E., and Young, G.A. (2003). Saddlepoint approximations and tests based on multivariate M-estimates. *Annals of Statistics* **31**(4), 1154–1169. doi:10.1214/aos/1059655909
3. Lee, S.M.S. and Young, G.A. (1995). Asymptotic iterated bootstrap confidence intervals. *Annals of Statistics* **23**(4), 1301–1330. doi:10.1214/aos/1176324710

Biometrika

4. Lee, S.M.S. and Young, G.A. (2016). Distribution of likelihood-based p -values under a local alternative hypothesis. *Biometrika* **103**(3), 641–653. doi:10.1093/biomet/asw021
5. DiCiccio, T.J., Kuffner, T.A., and Young, G.A. (2012). Objective Bayes, conditional inference and the signed root likelihood ratio statistic. *Biometrika* **99**(3), 675–686. doi:10.1093/biomet/ass028
6. DiCiccio, T.J. and Young, G.A. (2010). Objective Bayes and conditional inference in exponential families. *Biometrika* **97**(2), 497–504. doi:10.1093/biomet/asq002
7. DiCiccio, T.J. and Young, G.A. (2008). Conditional properties of unconditional parametric bootstrap procedures for inference in exponential families. *Biometrika* **95**(3), 747–758. doi:10.1093/biomet/asn011
8. Lee, S.M.S. and Young, G.A. (2003). Prepivoting by weighted bootstrap iteration. *Biometrika* **90**(2), 393–410. doi:10.1093/biomet/90.2.393
9. Brown, B.M., Hall, P., and Young, G.A. (2001). The smoothed median and the bootstrap. *Biometrika* **88**(2), 519–534. doi:10.1093/biomet/88.2.519
10. Lee, S.M.S. and Young, G.A. (1999). Nonparametric likelihood ratio confidence intervals. *Biometrika* **86**(1), 107–118. doi:10.1093/biomet/86.1.107
11. DiCiccio, T.J., Martin, M.A., and Young, G.A. (1993). Analytical approximations to conditional distribution functions. *Biometrika* **80**(4), 781–790. doi:10.1093/biomet/80.4.781
12. DiCiccio, T.J., Martin, M.A., and Young, G.A. (1992). Fast and accurate approximate double bootstrap confidence intervals. *Biometrika* **79**(2), 285–295. doi:10.1093/biomet/79.2.285
13. Daniels, H.E. and Young, G.A. (1991). Saddlepoint approximation for the studentized mean, with an application to the bootstrap. *Biometrika* **78**(1), 169–179. doi:10.1093/biomet/78.1.169
14. Young, G.A. and Daniels, H.E. (1990). Bootstrap bias. *Biometrika* **77**(1), 179–185. doi:10.1093/biomet/77.1.179
15. Young, G.A. (1988). A note on bootstrapping the correlation coefficient. *Biometrika* **75**(2), 370–373. doi:10.2307/2336187

16. Silverman, B.W. and Young, G.A. (1987). The bootstrap: to smooth or not to smooth? *Biometrika* **74**(3), 469–479. doi:10.1093/biomet/74.3.469

Journal of the Royal Statistical Society Series B

17. DiCiccio, T.J., Monti, A.C., and Young, G.A. (2006). Variance stabilization for a scalar parameter. *J. Roy. Statist. Soc. B* **68**(2), 281–303. doi:10.1111/j.1467-9868.2006.00544.x
18. Hall, P., Lee, S.M.S., and Young, G.A. (2000). Importance of interpolation when constructing double-bootstrap confidence intervals. *J. Roy. Statist. Soc. B* **62**(3), 479–491.
Stable URL:<http://www.jstor.org/stable/2680692>
19. Lee, S.M.S. and Young, G.A. (1999). The effect of Monte Carlo approximation on coverage error of double-bootstrap confidence intervals. *J. Roy. Statist. Soc. B* **61**(2), 353–366. doi:10.1111/1467-9868.00181
20. Lee, S.M.S. and Young, G.A. (1997). Estimation of the distribution function of a standardized statistic. *J. Roy. Statist. Soc. B* **59**(2), 383–400. doi:10.1111/1467-9868.00074
21. Lee, S.M.S. and Young, G.A. (1996). Sequential iterated bootstrap confidence intervals. *J. Roy. Statist. Soc. B* **58**(1), 235–251.
Stable URL:<http://www.jstor.org/stable/2346176>
22. DiCiccio, T.J., Martin, M.A., Stern, S.E., and Young, G.A. (1996). Information bias and adjusted profile likelihoods. *J. Roy. Statist. Soc. B* **58**(1), 189–203.
Stable URL:<http://www.jstor.org/stable/2346173>
23. Young, G.A. (1990). Alternative smoothed bootstraps. *J. Roy. Statist. Soc. B* **52**(3), 477–484.
Stable URL:<http://www.jstor.org/stable/2345671>

Statistica Sinica

24. DiCiccio, T.J., Kuffner, T.A., Young, G.A. and Zaretzki, R. (2015). Stability and uniqueness of p -values for likelihood-based inference. *Statistica Sinica* **25**(4), 1355–1376. doi:10.5705/ss.2013.055
25. Cheung, K.Y., Lee, S.M.S., and Young, G.A. (2006). Stein confidence sets based on non-iterated and iterated parametric bootstraps. *Statistica Sinica* **16**(1), 45–75. ISSN:10170405
26. Cheung, K.Y., Lee, S.M.S., and Young, G.A. (2005). Iterating the m out of n bootstrap in nonregular smooth function models. *Statistica Sinica* **15**(4), 945–967. ISSN:10170405
27. Lee, S.M.S. and Young, G.A. (1994). Practical higher-order smoothing of the bootstrap. *Statistica Sinica* **4**(2), 445–459. ISSN:10170405
28. DiCiccio, T.J., Martin, M.A., and Young, G.A. (1994). Analytical approximations to bootstrap distribution functions using saddlepoint methods. *Statistica Sinica* **4**(1), 281–295. ISSN:10170405

Statistical Science

29. Davison, A.C., Hinkley, D.V., and Young, G.A. (2003). Recent developments in bootstrap methodology. *Statistical Science* **18**(2), 141–157. doi:10.1214/ss/1063994969
30. Young, G.A. (1994). Bootstrap: More than a stab in the dark? With discussion and rejoinder by the author. *Statistical Science* **9**(3), 382–395. doi:10.1214/ss/1177010383

Publications in Other Statistics Journals:

31. Kuffner, T.A., Lee, S.M.S., and Young, G.A. (2018). Consistency of a hybrid block bootstrap for distribution and variance estimation for sample quantiles of weakly dependent sequences. *Australian & New Zealand Journal of Statistics* **60**(1), 103–114. doi:10.1111/anzs.12206
32. DiCiccio, T.J., Kuffner, T.A., and Young, G.A. (2017). A simply analysis of the exact probability matching prior in the location-scale model. *American Statistician* **71**(4), 302–304. doi:10.1080/00031305.2016.1255662
33. DiCiccio, T.J., Kuffner, T.A., and Young, G.A. (2017). The formal relationship between analytic and bootstrap approaches to parametric inference. *Journal of Statistical Planning and Inference* **191**, 81–87. doi:10.1016/j.jspi.2017.05.007
34. DiCiccio, T.J., Kuffner, T.A., and Young, G.A. (2015). Quantifying nuisance parameter effects via decompositions of asymptotic refinements for likelihood-based statistics. *Journal of Statistical Planning and Inference* **165**, 1–12. doi:10.1016/j.jspi.2015.03.006
35. Lu, H.Y.K. and Young, G.A. (2012). Parametric bootstrap under model mis-specification. *Comput. Statist. Data Anal.* **56**(8), 2410–2420. doi:10.1016/j.csda.2012.01.018
36. Young, G.A. (2009). Routes to higher-order accuracy in parametric inference. *Aust. N. Z. J. Stat.* **51**(2), 115–126. doi:10.1111/j.1467-842X.2009.00548.x
37. Lee, S.M.S. and Young, G.A. (2005). Parametric bootstrapping with nuisance parameters. *Statistics and Probability Letters* **71**(2), 143–153. doi:10.1016/j.spl.2004.10.026
38. Young, G.A. (2003). Better bootstrapping by constrained prepivoting. *Metron* **61**(2), 227–242. ISSN: 00261424
39. Sjøstedt-de Luna, S. and Young, G.A. (2003). The bootstrap and kriging prediction intervals. *Scandinavian J. Statistics* **30**(1), 175–192. doi:10.1111/1467-9469.00325
40. Putter, H. and Young, G.A. (2001). On the effect of covariance function estimation on the accuracy of kriging predictors. *Bernoulli* **7**(3), 421–438. doi:10.2307/3318494
41. Brown, B.M., Hall, P., and Young, G.A. (1997). On the effect of inliers on the spatial median. *J. Multivariate Analysis* **63**, 88–104. doi:10.1006/jmva.1997.1691
42. De Angelis, D., Hall, P., and Young, G.A. (1993). A note on coverage error of bootstrap confidence intervals for quantiles. *Mathematical Proceedings of the Cambridge Philosophical Society* **114**(3), 517–531. doi:10.1017/S0305004100071802
43. De Angelis, D., Hall, P., and Young, G.A. (1993). Analytical and bootstrap approximations to estimator distributions in L^1 regression. *J. American Statistical Association* **88**(424), 1310–1316. doi:10.1080/01621459.1993.10476412

44. DiCiccio, T.J., Martin, M.A., and Young, G.A. (1992). Analytical approximations for iterated bootstrap confidence intervals. *Statistics and Computing* **2**(3), 161–171. doi:10.1007/BF01891208
45. De Angelis, D. and Young, G.A. (1992). Bootstrapping the correlation coefficient: a comparison of smoothing strategies. *J. Statistical Computation and Simulation* **40**, 167–176. doi:10.1080/00949659208811374
46. De Angelis, D. and Young, G.A. (1992). Smoothing the bootstrap. *International Statistical Review* **60**(1), 45–56. doi:10.2307/1403500
47. DiCiccio, T.J., Martin, M.A., and Young, G.A. (1991). An invariance property of marginal density and tail probability approximations for smooth functions. *Statistics and Probability Letters* **12**(3), 249–255. doi:10.1016/0167-7152(91)90086-7
48. Young, G.A. (1986). Conditioned data-based simulations: some examples from geometrical statistics. *International Statistical Review* **54**(1), 1–13. doi:10.2307/1403254

Contributions to Edited Volumes:

49. DiCiccio, T.J. and Young, G.A. (2011). Conditional inference by estimation of a marginal distribution. In DasGupta, A. (ed.) *Selected works of Debabrata Basu*, 9–14, *Sel. Works Probab. Stat.*, Springer, New York. doi:10.1007/978-1-4419-5825-9
50. Young, G.A. and DiCiccio, T.J. (2010). Computer-intensive conditional inference. In Mantovan, P. and Secchi, P. (eds.) *Complex Data Modeling and Computationally Intensive Statistical Methods*, 137–150, Springer, Milan. doi:10.1007/978-88-470-1386-5_11

Other Peer-Reviewed Publications:

51. Ruan, D., Young, G.A., and Montana, G. (2015). Differential analysis of biological networks. *BMC Bioinformatics* **16**(1), 1–13. doi:10.1186/s12859-015-0735-5
52. De Angelis, D., Fachin, S. and Young, G.A. (1997). Bootstrapping unit root tests. *Applied Economics* **29**(9), 1155–1161. doi:10.1080/00036849700000006
53. De Angelis, D. and Young, G.A. (1990). Un esempio di perequazione empirica del bootstrap. *Quaderni di Statistica e Econometria* **12**, 163–170.
54. Kendall, D.G. and Young, G.A. (1984). Indirectional statistics and the significance of an asymmetry discovered by Birch. *Monthly Notices of the Royal Astronomical Society* **207**(3), 637–647. doi:10.1093/mnras/207.3.637

Comments and Invited Discussions:

55. (with K. Lu) Discussion of the paper by Cule, Samworth and Stewart (2010). *J. Roy. Statist. Soc. B* **72**(5), 582–584.
56. (with S.M.S. Lee) Comment on ‘Hybrid resampling methods for confidence intervals’, by C.-S. Chuang and T.-L. Lai (2000). *Statistica Sinica* **10**, 43–46.
57. (with S.M.S. Lee) ‘On the use of bootstrap calibration’, invited commentary on a paper by DiCiccio and Efron (1996). *Statistical Science* **11**, 221–223.

58. Discussion of the paper by Efron. *J. Roy. Statist. Soc. B* **54**, 113–114 (1992).
59. Discussion of the papers by Hinkley and by DiCiccio and Romano. *J. Roy. Statist. Soc. B* **50**, 358 (1988).
60. (with D.L. Banks) Discussion of the paper by Jones and Sibson. *J. Roy. Statist. Soc. A* **150**, 23–24 (1987).

Invited Conference Papers:

61. Lee, S.M.S. and Young, G.A. (1997). Bootstrapping and improved nonparametric likelihood ratio confidence intervals. *Proceedings of the Statistical Computing Section*, 18–23, American Statistical Association.
62. Lee, S.M.S. and Young, G.A. (1997). Asymptotics and resampling methods. In Billard, L. and Fisher, N.I. (eds.) *Proceedings of 28th Symposium on the Interface of Computing Science and Statistics*, 221–227, Graph-Image-Vision, Sydney. ISBN: 1-886658-02-1
63. Lee, S.M.S. and Young, G.A. (1995). Approximate iterated bootstrap confidence intervals. In Sall, J. and Lehman, A. (eds.) *Proceedings of 26th Symposium on the Interface of Computing Science and Statistics*, 464–471, INTERFACE '94, Research Triangle Park. Accession Number: INSPEC:5379772
64. Young, G.A. (1988). Data-smoothing and bootstrap resampling. In Fedorov, V. and Lauter, H. (eds.) *Model-oriented data analysis*, Lecture Notes in Economics and Mathematical Systems, 144–150, Springer, Berlin. ISBN: 3-540-18596-8

Contributed Conference Papers:

65. Young, G.A. (1988). Resampling tests of statistical hypotheses. In Edwards, D. and Raun, N.E. (eds.) *Compstat 88: Proceedings in Computational Statistics*, 233–238, Physica-Verlag, Heidelberg.
66. Young, G.A. (1987). Non-parametric smoothing of the bootstrap. In Prohorov, Y. and Sazonov, V.V. (eds.) *Proceedings of the 1st World Congress of the Bernoulli Society* Volume 2, 105–108, VNU Science Press, Utrecht.

Miscellanea:

67. Shen, D., Zhang, D., Young, G.A. and Parvin, B. (2015). Editorial: Machine learning and data mining in medical imaging. *IEEE J. Biomedical and Health Informatics* **19**(5), 1587–1588. doi:10.1109/JBHI.2015.2444011
68. (with D. De Angelis) 'Bootstrap method'. In Armitage, P. and Colton, T. (eds.) *Encyclopedia of Biostatistics, Volume 1*, 426–433. Wiley, New York (1998). [Reproduced in Elston, R., Olson, J. and Palmer, L. (eds.) *Encyclopedia of Human Genetics and Genetic Epidemiology* (2002).]

Editorial and Service (selected):

2019 – 2022 Elected Member, IMS Council
 2019 – present Associate Editor, *Journal of the Royal Statistical Society Series B*
 2015 – present Associate Editor, *Bernoulli*
 2013 – present Associate Editor, *Computational Statistics and Data Analysis*
 2012 – present Associate Editor, *Journal of Statistical Planning and Inference*
 1999 – present Associate Editor, *Biometrika*
 2008 – 2012 Associate Editor, *Statistica Sinica*
 1994 – 1998 Joint Editor, *Journal of the Royal Statistical Society Series B*

Ph.D. Students:

Current Daniel Garcia Rasines, Imperial College London (co-advised with Axel Gandy)
 2011 Todd Kuffner, Imperial College London
 2011 Kevin Lu, Imperial College London
 2004 Richard Samworth, University of Cambridge
 1994 Stephen M.S. Lee, University of Cambridge
 1993 Iain Stemp, University of Cambridge

Significant Service to UK Statistics:

2014–2017 Honorary Officer, Publications Theme, Royal Statistical Society
 2013 Member, Search Committee for Editorship of Series B, Royal Statistical Society
 2012 – 2013 Chair, Research Section Committee, Royal Statistical Society
 2011 – 2012 Member, Royal Statistical Society Academic Affairs Advisory Group
 2010 – 2015 Head, Statistics Section, Department of Mathematics, Imperial College London
 2010 – 2012 Chair, Committee of Professors of Statistics, UK and Ireland
 2010 – 2012 Member, Council for the Mathematical Sciences, representing the Royal Statistical Society (including CMS-EPSRC Liaison)
 2009 Member, Search Committee for Editorship of Series B, Royal Statistical Society
 2006 – Statistics Coordinator for London Taught Course Center, and Imperial Representative on the LTCC Management Committee
 2004 – 2005 Chair, RSS/EPSRC committee in charge of the Graduate Training Programme
 2003 – 2004 Member, RSS/EPSRC committee in charge of the Graduate Training Programme
 1994 – 1998 Member, ex officio, Royal Statistical Society Editorial Policy Board, Programme Committee, and Research Section Committee
 1994 – 1998 Joint Editor, *Journal of the Royal Statistical Society Series B*
 1988 – 1994 Member, Series B Editorial Board, Royal Statistical Society
 1988 – 1992 Member, Royal Statistical Society Research Committee