C.V. of Art B. Owen   November 2018

Art B. Owen
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Research interests

Empirical likelihood & bootstrap
Large scale hypothesis testing for bioinformatics
Monte Carlo, quasi-Monte Carlo and uncertainty quantification
Large unbalanced crossed data sets

Academic positions

2017–	Chair of Statistics	Stanford University
1997–	Professor	Stanford University
1991–1997	Associate Professor	Stanford University
1985–1991	Assistant Professor	Stanford University

Sabbatical visits: Genentech (Autumn, Winter 2013/2014), Google (Autumn, Winter 2004/2005), MSRI Berkeley (Winter 1991/1992) AT&T Bell Labs (Autumn 1991/1992) University of Chicago (Spring 1989/1990)

Education

1987	PhD	Statistics	Stanford University
1983	M.S.	Statistics	Stanford University
1981	B. Math.	Statistics and Computer Science	University of Waterloo

Honors

- London Mathematical Society, Invited Lecturer, 2018

- Elected Fellow ASA, 2015

- First David Sprott Distinguished Lecture, 2014

- Canadian Journal of Statistics Award, 2013

- Snedecor lecture, 2012

- IMS Medallion lecture, 2005

- Pierre Robillard lecture, 2005

- Elected Fellow IMS, 1996

- Alcoa Foundation, science support 1995, 1996

Scholarly works

Books

[1] A. B. Owen and P. W. Glynn, editors. *Monte Carlo and Quasi-Monte Carlo Methods 2016.* Springer, Cham, Switzerland, 2018.

[2] P. L'Ecuyer and A. B. Owen, editors. *Monte Carlo and Quasi-Monte Carlo Methods 2008.* Springer-Verlag, Berlin, 2009.

[3] A. B. Owen. *Empirical Likelihood.* Chapman and Hall/CRCpress, Boca Raton, FL, 2001.

Articles

[1] E. Dobriban and A. B. Owen. Derandomized parallel analysis. *Journal of the Royal Statistical Society, Series B*, 2019. (to appear).

[2] K. Gao and A. B. Owen. Estimation and inference for very large linear mixed effects models. *Statistica Sinica*, 2019. (to appear).

[3] H. Y. He, K. Basu, Q. Zhao, and A. B. Owen. Permutation p-value approximation via generalized Stolarsky invariance. *Annals of Statistics*, 2018. (to appear).

[4] K. Basu and A. B. Owen. Quasi-Monte Carlo for an integrand with a singularity along a diagonal in the square. In *Festschrift for the 80th birthday of Ian Sloan.* Springer, 2018.

[5] K. Gao and A. B. Owen. Efficient moment calculations for variance components in large unbalanced crossed random effects designs. *Electronic Journal of Statistics*, 11(1):1235–1296, 2017.

[6] A. B. Owen and C. Prieur. On Shapley value for measuring importance of dependent inputs. *Journal of Uncertainty Quantification*, 5(1):986–1002, 2017.

[7] J. Wang, Q. Zhao, T. Hastie, and A. B. Owen. Confounder adjustment in multiple hypothesis testing. *Annals of Statistics*, 45(5):1963–1894, 2017.

[8] A. B. Owen. Statistically efficient thinning of a Markov chain sampler. *Journal of Computational and Graphical Statistics*, 26(3):738–744, 2017.

[9] M. Lee and A. B. Owen. Single nugget Kriging. *Statistica Sinica*, 28:649–669, 2017.

[10] K. Basu and A. B. Owen. Transformations and Hardy-Krause variation. *SIAM Journal on Numerical Analysis*, 54(3):1946–1966, 2016.

[11] J. Wang and A. B. Owen. Bi-cross-validation for factor analysis. *Statistical Science*, 31(1):119–139, 2016.

[12] K. Basu and A. B. Owen. Scrambled geometric net integration over general product spaces. *Foundations of Computational Mathematics*, 2015.

[13] E. Dobriban, K. Fortney, S. K. Kim, and A. B. Owen. Optimal multiple testing under a Gaussian prior on effect sizes. *Biometrika*, 102(4):753–766, 2015.

[14] Z. He and A. B. Owen. Extensible grids: uniform sampling on a space-filling curve. *Journal of the Royal Statistical Society, Series B*, 78:917–931, 2015.

[15] J. L. Larson and A. B. Owen. Moment based gene set tests. *BMC Bioinformatics*, 16(132):1–17, 2015.

[16] A. B. Owen. A constraint on extensible quadrature rules. *Numerische Mathematik*, pages 1–8, 2015.

[17] K. Basu and A. B. Owen. Low discrepancy constructions in the triangle. *SIAM Journal on Numerical Analysis*, 53(2):743–761, 2015.

[18] A. Chen, A. B. Owen, and M. Shi. Data enriched linear regression. *Electronic Journal of Statistics*, 9:1078–1112, 2015.

[19] K. Fortney, E. Dobriban, P. Garagnani, C. Pirazzini, D. Mari, G. Atzmon, N. Barzilai, C. Franceschi, A. B. Owen, and S. K. Kim. Genome-wide scan informed by age-related disease identifies loci for exceptional human lngevity. *PLoS Genetics*, 11(12):e1005728, 2015.

[20] A. B. Owen and P. A. Roediger. The sign of the logistic regression coefficient. *The American Statistician*, 68(4):298–301, 2014.

[21] A. B. Owen, J. Dick, and S. Chen. Higher order Sobol' indices. *Information and Inference*, 3:59–81, 2014.

[22] A. B. Owen. Sobol' indices and Shapley value. *Journal of Uncertainty Quantification*, 2:245–251, 2014.

[23] A. B. Owen. Self-concordance for empirical likelihood. *Canadian Journal of Statistics*, 41(3):387–397, 2013. **(Best paper award 2013)**.

[24] A. B. Owen. Better estimation of small Sobol' sensitivity indices. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 23(2):11, 2013.

[25] F. J. Hickernell, L. Jiang, Y. Liu, and A. B. Owen. Guaranteed conservative fixed width confidence intervals via Monte Carlo sampling. In J. Dick, F. Y. Kuo, G. W. Peters, and I. H. Sloan, editors, *Monte Carlo and Quasi-Monte Carlo Methods 2012*. Springer-Verlag, 2013.

[26] A. B. Owen. Variance components and generalized Sobol' indices. *Journal of Uncertainty Quantification*, 1(1):19–41, 2013.

[27] A. B. Owen and D. Eckles. Bootstrapping data arrays of arbitrary order. *The Annals of Applied Statistics*, 6(3):895–927, 2012.

[28] Y. Sun, N. R. Zhang, and A. B. Owen. Multiple hypothesis testing adjusted for latent variables, with an application to the AGEMAP gene expression data. *The Annals of Applied Statistics*, 6(4):1664–1688, 2012.

[29] J. S. Dyer and A. B. Owen. Correct ordering in the Zipf–Poisson ensemble. *Journal of the American Statistical Association*, 107(500):1510–1517, 2012. **(featured article)**.

[30] D. F. Gleich and A. B. Owen. Moment-based estimation of stochastic Kronecker graph parameters. *Internet Mathematics*, 8(3):232–256, 2012.

[31] S. Chen, M. Matsumoto, T. Nishimura, and A. B Owen. New inputs and methods for Markov chain quasi-Monte Carlo. In *Monte Carlo and Quasi-Monte Carlo Methods 2010*, pages 313–327. Springer, 2012.

[32] L. Ma, W. H. Wong, and A. B. Owen. A sparse transmission disequilibrium test for haplotypes based on Bradley-Terry graphs. *Human Heredity*, 73(1):52–61, 2012.

[33] Y. She and A. B. Owen. Outlier identification using nonconvex penalized regression. *Journal of the American Statistical Association*, 106(494):626–639, 2011. **(featured article)**.

[34] S. Chen, J. Dick, and A. B. Owen. Consistency of Markov chain quasi-Monte Carlo on continuous state spaces. *Annals of Statistics*, 39(2):673–701, 2011.

[35] Y. Xu, J. S. Dyer, and A. B. Owen. Empirical stationary correlations for semi-supervised learning on graphs. *The Annals of Applied Statistics*, 4(2):589–614, 2010.

[36] P. O. Perry and A. B. Owen. A rotation test to verify latent structure. *Journal of Machine Learning Research*, 11:603–624, 2010.

[37] S. C. Emerson and A. B. Owen. Calibration of the empirical likelihood method for a vector mean. *Electronic Journal of Statistics*, 3:1161–1192, 2009.

[38] A. B. Owen. Monte Carlo and quasi-Monte Carlo for statistics. In P. L'Ecuyer and A. B. Owen, editors, *Monte Carlo and Quasi-Monte Carlo Methods 2008*. Springer, 2009.

[39] A. B. Owen. Recycling physical random numbers. *Electronic Journal of Statistics*, 3:1531–1541, 2009.

[40] A. B. Owen. Karl Pearson's meta-analysis revisited. *Annals of Statistics*, 37(6):3867–3892, 2009.

[41] L. K. Southworth, S. K. Kim, and A. B. Owen. Properties of balanced permutations. *Journal of Computational Biology*, 16(4):625–638, 2009.

[42] A. B. Owen and P. O. Perry. Bi-cross-validation of the SVD and the non-negative matrix factorization. *Annals of applied statistics*, 3(2):564–594, 2009.

[43] L. K. Southworth, A. B. Owen, and S. K. Kim. Aging mice show a decreasing correlation of gene expression within genetic modules. *PLoS genetics*, 5(12):e1000776, 2009.

[44] A. B. Owen. Local antithetic sampling with scrambled nets. *Annals of Statistics*, 36(5):2319–2343, 2008.

[45] S. D. Tribble and A. B. Owen. Construction of weakly CUD sequences for MCMC sampling. *Electronic Journal of Statistics*, 2:634–660, 2008.

[46] A. B. Owen. Infinitely imbalanced logistic regression. *Journal of Machine Learning Research*, 8:761–773, 2007.

[47] A. B. Owen. The pigeonhole bootstrap. *The Annals of Applied Statistics*, 1(2):386–411, 2007.

[48] J. M. Zahn, S. Poosala, A. B. Owen, D. K. Ingram, A. Lustig, A. Carter, A. T. Weeratna, D. D. Taub, M. Gorospe, K. Mazan-Mamczarz, E. G. Lakatta, K. R. Boheler, X. Xu, M. P. Mattson, G. Falco, Mi S. H. Ko, D. Schlessinger, J. Firman, S. K. Kummerfeld, W. H. Wood III, A. B. Zonderman, S. K. Kim, and K. G. Becker. AGEMAP: A gene expression database for aging in mice. *PLoS Genetics*, 3(11):2326–2337, 2007.

[49] J. M. Zahn, R. Sonu, H. Vogel, E. Crane, K. Mazan-Mamczarz, R. Rabkin, R. W. Davis, K. G. Becker, A. B. Owen, and S. K. Kim. Transcriptional profiling of aging in human muscle reveals a common aging signature. *PLOS Genetics*, 2(7):1058–1069, 2006.

[50] A. B. Owen. Halton sequences avoid the origin. *SIAM Review*, 48:487–583, 2006.

[51] A. B. Owen. On the Warnock-Halton quasi-standard error. *Monte Carlo Methods and Applications*, 12(1):47–54, 2006.

[52] R. Liu and A. B. Owen. Estimating mean dimensionality of analysis of variance decompositions. *Journal of the American Statistical Association*, 101(474):712–721, 2006.

[53] A. B. Owen. Randomized QMC and point singularities. In H. Niederreiter and D. Talay, editors, *Monte Carlo and Quasi-Monte Carlo Methods 2004*, pages 403–418. Springer, 2006.

[54] Z. Lin, R. B. Altman, and A. B. Owen. Confidentiality in genome research. *Science*, 313(5786):441, 2006.

[55] A. B. Owen. Variance of the number of false discoveries. *Journal of the Royal Statistical Society, Series B*, 67:411–426, 2005.

[56] A. B. Owen and S. D. Tribble. A quasi-Monte Carlo Metropolis algorithm. *Proceedings of the National Academy of Sciences*, 102(25):8844–8849, 2005.

[57] F. J. Hickernell, C. Lemieux, and A. B. Owen. Control variates for quasi-Monte Carlo. *Statistical Science*, 20:1–31, 2005. **(with discussion)**.

[58] A. B. Owen. Multidimensional variation for quasi-Monte Carlo. In Jianqing Fan and Gang Li, editors, *Contemporary multivariate analysis and design of experiments: in celebration of Prof. Kai-Tai Fang's 65th birthday*, 2005.

[59] G. Rodwell, R. Sonu, J. M. Zahn, J. Lund, J. Wilhelmy, L. Wang, W. Xiao, M. Mindrinos, E. Crane, E. Segal, B. Myers, R. Davis, J. Higgins, A. B. Owen, and S. K. Kim. A transcriptional profile of aging in the human kidney. *PLOS Biology*, 2(12):2191–2201, 2004.

[60] Z. Lin, A. B. Owen, and R. B. Altman. Genomic research and human subject privacy. *Science*, 305:183, 2004.

[61] K. H. Rubins, L. E. Hensley, P. B. Jahrling, A. R. Whitney, T. W. Geisbert, J. W. Huggins, A. B. Owen, J. W. LeDuc, P. O. Brown, and D. A. Relman. The host response to smallpox: analysis of the gene expression program in peripheral blood cells in a nonhuman primate model. *Proceedings of the National Academy of Sciences*, 101(42):15190–15195, 2004.

[62] W. D. Irish, D. A. McCollum, R. J. Tesi, A. B. Owen, D. C. Brennan, J. E. Bailly, and M. A. Schnitzler. Nomogram for predicting the likelihood of delayed graft function in adult cadaveric renal transplant recipients. *Journal of the American Society of Nephrology*, 14(11):2967–2974, 2003.

[63] A. B. Owen. Data squashing by empirical likelihood. *Data Mining and Knowledge Discovery*, 7(1), 2003.

[64] A. B. Owen. Variance with alternative scramblings of digital nets. *ACM Transactions on Modeling and Computer Simulation*, 13(4):363–378, 2003.

[65] A. B. Owen, J. Stuart, K. Mach, A. M. Villeneuve, and S. K. Kim. A gene recommender algorithm to identify co-expressed genes in C. elegans. *Genome Research*, 2003.

[66] O. G. Troyanskaya, K. Dolinski, A. B. Owen, R. B. Altman, and D. Botstein. A Bayesian framework for combining heterogeneous data sources for gene function prediction (in S. cerevisiae). *Proceedings of the National Academy of Sciences*, 2003.

[67] A. Meibom, M. Stage, J. Wooden, B. R. Constantz, R. B. Dunbar, A. B. Owen, N. Grumet, C. R. Bacon, and C. P. Chamberlain. Monthly Strontium/Calcium oscillations in the symbiotic coral aragonite: Biological effects limiting the precision of the paleotemperature proxy. *Geophysical Research Letters*, 30(7), 2003.

[68] T. Jiang and A. B. Owen. Quasi-regression with shrinkage. *Mathematics and Computers in Simulation*, 62:231–241, 2003.

[69] A. B. Owen. The dimension distribution and quadrature test functions. *Statistica Sinica*, 13(1):1–17, 2003.

[70] L. Lazzeroni and A. B. Owen. Plaid models for gene expression data. *Statistica Sinica*, 24(1):61–86, 2002.

[71] C. Lemieux and A. B. Owen. Quasi-regression and the relative importance of the ANOVA components of a function. In K. T. Fang, F. J. Hickernell, and H. Niederreiter, editors, *Monte Carlo and Quasi-Monte Carlo Methods 2000*, pages 331–344, Berlin, 2002. Springer-Verlag.

[72] J. An and A. B. Owen. Quasi-regression. *Journal of Complexity*, 17(4):588–607, 2001.

[73] A. B. Owen. Assessing linearity in high dimensions. *Annals of Statistics*, 28(1):1–19, 2000.

[74] A. B. Owen and Y. Zhou. Safe and effective importance sampling. *Journal of the American Statistical Association*, 95(449):135–143, 2000.

[75] W. Morokoff, R. Lagnado, and A. B. Owen. Tolerance for risk. *Risk magazine*, 1998.

[76] A. B. Owen. Latin supercube sampling for very high dimensional simulations. *ACM Transactions on Modeling and Computer Simulation*, 8(2):71–102, 1998.

[77] A. B. Owen. Scrambling Sobol' and Niederreiter-Xing points. *Journal of Complexity*, 14(4):466–489, December 1998.

[78] A. B. Owen. Monte Carlo extension of quasi-Monte Carlo. In D. J. Medieiros, E.F. Watson, M. Manivannan, and J. Carson, editors, *1998 Winter Simulation Conference Proceedings*, pages 571–577, 1998.

[79] A. B. Owen. Monte Carlo variance of scrambled equidistribution quadrature. *SIAM Journal of Numerical Analysis*, 34(5):1884–1910, 1997.

[80] A. B. Owen. Scrambled net variance for integrals of smooth functions. *Annals of Statistics*, 25(4):1541–1562, 1997.

[81] R. E. Caflisch, W. Morokoff, and A. B. Owen. Valuation of mortgage backed securities using Brownian bridges to reduce effective dimension. *Journal of Computational Finance*, 1:27–46, 1997.

[82] A. B. Owen and D. T. Tavella. Scrambled nets for value-at-risk calculations. In Sue Grayling, editor, *VAR Understanding and applying value-at-risk*, pages 257–273, London, 1997. Risk Publications.

[83] G. Wolff, D. Stork, and A. B. Owen. Empirical error-confidence curves for neural-network and Gaussian classifiers. *International Journal of Neural Systems*, 7(3):263–271, July 1996.

[84] A. B. Owen. Monte Carlo variance of scrambled equidistribution quadrature. *SIAM Journal of Numerical Analysis*, 34(5):1884–1910, 1997.

[85] W. Wang, J. Ye, A. B. Owen, C.N. Berglund, and R.F.W. Pease. Adaptive metrology: An economical strategy for judging the acceptability of a mask pattern. *Journal of Vacuum Science Technology B*, 13(6):2642–2647, December 1995.

[86] A. B. Owen. Nonparametric likelihood confidence bands for a distribution function. *Journal of the American Statistical Association*, 90(430):516–521, 1995.

[87] A. B. Owen. Randomly permuted (t, m, s)-nets and (t, s)-sequences. In H. Niederreiter and P. Jau-Shyong Shiue, editors, *Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing*, pages 299–317, New York, 1995. Springer-Verlag.

[88] P. G. Hall, C. Huber, A. B. Owen, and A. Coventry. Asymptotically optimal balloon density estimates. *Journal of Multivariate Analysis*, 51:352–371, 1994.

[89] A. B. Owen. Controlling correlations in Latin hypercube samples. *Journal of the American Statistical Association*, 89:1517–1522, 1994.

[90] A. B. Owen. Lattice sampling revisited: Monte Carlo variance of means over randomized orthogonal arrays. *The Annals of Statistics*, 22:930–945, 1994.

[91] P. G. Hall and A. B. Owen. Empirical likelihood confidence bands in density estimation. *Journal of Computational and Graphical Statistics*, 2:273–289, 1993.

[92] A. B. Owen. Orthogonal arrays for computer experiments, integration and visualization. *Statistica Sinica*, 2:439–452, 1992.

[93] A. B. Owen. A central limit theorem for Latin hypercube sampling. *Journal of the Royal Statistical Society, Series B*, 54:541–551, 1992.

[94] A. B. Owen. Empirical likelihood for linear models. *Annals of Statistics*, 19(4):1725–1747, 1991.

[95] A. B. Owen. Empirical likelihood ratio confidence regions. *Annals of Statistics*, 18:90–120, 1990.

[96] S. Sharifzadeh, J. R. Koehler, A. B. Owen, and J. D. Shott. Using simulators to model transmitted variability in IC manufacturing. *IEEE Trans. Semicond. Manufact.*, 2(3):82–93, 1989.

[97] A. B. Owen. Empirical likelihood ratio confidence intervals for a single functional. *Biometrika*, 75:237–249, 1988.

[98] J. A. McDonald and A. B. Owen. Smoothing with split linear fits. *Technometrics*, 28(3):195–208, 1986.

[99] A. B. Owen. A neighbourhood-based classifier for LANDSAT data. *The Canadian Journal of Statistics*, 12(3):191–200, 1984.

Technical Reports

[1] A. B. Owen and H. Varian. Optimizing the tie-breaker regression discontinuity design. Technical report, arXiv1808.07563, 2018.

[2] E. Rosenman, M. Baiocchi, H. Banack, and A. B. Owen. Propensity score methods for merging observational and experimental datasets. Technical report, Stanford University, Statistics Department, 2018.

[3] A. Ben Abdellah, P. L'Ecuyer, A. B. Owen, and F. Puchhammer. Density estimation by randomized quasi-Monte Carlo. Technical report, arXiv1807.06133, 2018.

[4] Art B. Owen, M. Cherkov, and Y. Maximov. Importance sampling the union of rare events with an application to power systems analysis. Technical report, Stanford University, 2017.

[5] Art B. Owen. Effective dimension of weighted Sobolev spaces: non-periodic case. Technical report, Stanford University, 2017.

[6] Art B. Owen. A randomized Halton algorithm in R. Technical report, Stanford University, 2017.

[7] J. Wang, C. Sabbati, and Art B. Owen. Adaptive filtering multiple testing procedures for partial conjunction hypotheses. Technical report, Stanford University, 2016.

[8] Art B. Owen. Confidence intervals with control of the sign error in low power settings. Technical report, Stanford University, 2016.

[9] M. Lawrence, M. A. Huntley, E. Stawiski, A. B. Owen, T. D. Wu, Goldstein, L., Y. Cao, J. Degenhardt, J. Young, J. Guillory, S. Heldens, A. Jackson, S. Seshagiri, and R Gentleman. Genomic variant calling: Flexible tools and a diagnostic data set. Technical report, bioRxiv, 027217, 2014.

[10] H. Y. He and A. B. Owen. Optimal mixture weights in multiple importance sampling. Technical report, Stanford University, Department of Statistics, 2014.

Discussions and unrefereed publications

[1] H. He and A. B. Owen. Discussion of sequential quasi-Monte Carlo sampling by Gerber and Chopin. *Journal of the Royal Statistical Society, Series B*, 77(3):563, 2015.

[2] A. B. Owen. A robust hybrid of lasso and ridge regression. In J. S. Verducci, X. Shen, and J. Lafferty, editors, *Contemporary Mathematics volume 443. AMS-IMS-SIAM joint summer research conference, machine and statistical learning: prediction and discovery*, 2006.

[3] A. B. Owen and Y. Zhou. Advances in importance sampling. In Y. S. Abu-Mostafa, B. LeBaron, A. W. Lo, and A. S. Weigend, editors, *Computational Finance (Proceedings of the Sixth International Conference on Computational Finance, Leonard N. Stern School of Business, January 6-8, 1999).*, Cambridge, MA, 1999. MIT Press.

[4] A. B. Owen. Empirical likelihood. In S. Kotz, C. Read, and D. Banks, editors, *Encyclopedia of Statistical Sciences update volume*. J. Wiley, New York, 1997.

[5] J. Koehler and A. B. Owen. Computer experiments. In S. Ghosh and C. R. Rao, editors, *Handbook of Statistics, 13: Design and Analysis of Experiments*, pages 261–308. North-Holland, 1996.

[6] A. B. Owen. Discussion of the paper by Newton and Raftery. *Journal of the Royal Statistical Society, Series B*, 56(1):42–43, 1994.

[7] A. B. Owen. Discussion of neural networks and related methods for classification, by B. D. Ripley. *Journal of the Royal Statistical Society, Series B*, 56, 1994.

[8] A. B. Owen. Discussion of: Multivariate adaptive regression splines by J. Friedman. *Annals of Statistics*, 9:102–111, 1991.

[9] A. B. Owen. Empirical likelihood and small samples. In C. Page and R. LePage, editors, *Computing Science and Statistics: Proceedings of the 22nd symposium on the Interface*, pages 79–88, 1990.

[10] A. B. Owen. Empirical likelihood ratio confidence regions. *Bulletin of the International Statistical Institute, STMA V31 0203*, 53:373–393, 1989.

[11] A. B. Owen, J. Koehler, and S. Sharifzadeh. Discussion of: Computer exeriments, by Sacks, Welch, Mitchell and Wynn. *Statistical Science*, 4:429–430, 1989.

[12] A. B. Owen. Is glass A the pole position?: statistical variation by glass. In *Vintners club: Fourteen years of wine tasting, 1973–1987*. Vintners Press, San Francisco, 1988.

[13] A. B. Owen. Discussion of: Statistics, Images and Pattern Recognition, by B. D. Ripley. *Canadian Journal of Statistics*, 14:106–110, 1986.

PhD students

Advising 3 PhD students: Jessica Hwang, Evan Rosenman, Swarnadip Ghosh. The following have completed their dissertations.

[1] Minyong Lee, 2017, Prediction and Dimension Reduction Methods in Computer Experiments

[2] Katelyn Gao, 2017, Scalable Estimation and Inference for Massive Linear Mixed Models with Crossed Random Effects

[3] Hera He, 2016, Efficient permutation based p-value estimation for gene set tests.

[4] Jingshu Wang, 2016, Factor analysis for high-dimensional data.

[5] Kinjal Basu, 2016, Quasi-Monte Carlo methods in non-cubical spaces.

[6] Yunting Sun, 2011, On latent systematic effects in multiple hypotheses.

[7] Su Chen, 2011, Consistency and convergence rate of Markov chain Monte Carlo with examples.

[8] Justin Dyer, 2010, Visualizing and modeling joint behavior of categorical variables with a large number of levels.

[9] Ya Xu, 2010, Semi-supervised learning on graphs.

[10] Sarah Emerson, 2009, Small sample performance and calibration of the empirical likelihood method.

[11] Patrick Perry, 2009, Cross-validation for unsupervised learning.

[12] Yiyuan She, 2008, Sparse regression with exact clustering.

[13] Seth Tribble, 2007, Markov chain Monte Carlo algorithms using completely uniformly distributed driving sequences.

[14] Ruixue Liu, 2005, New findings of functional ANOVA with applications to computational finance and statistics.

[15] Xiaohu (Tom) Zhang, 2005, Stochastic sampling for antialiasing in computer graphics.

[16] Tao Jiang, 2003, Data driven shrinkage strategies for quasi-regression.

[17] Kristofer Jennings, 2002, On bias reduction using the bootstrap.

[18] Jorge Picazo, 2002, Machine learning characterization of decision boundaries in multi-dimensional American options.

[19] Lingyu Chen, 2001, Extensions of stochastic approximation for high dimensinoal optimization, with applications to investment allocation and experimental design.

[20] Yi Zhou, 1998, Adaptive importance sampling for integration.

[21] Weidong Wang, 1997, Adaptive metrology and mask inspection.

[22] Jim Koehler, 1990, Design and estimation issues in computer experiments.

Selected recent presentations

- "Foundations of Monte Carlo". 5 Lectures. LMS Lecture and CRISM Summer school. Warwick. July 2018.

- "Quasi-Monte Carlo". 4 Lectures. LMS Lecture and CRISM Summer school. Warwick. July 2018.

- "Importance sampling for the power grid and correlated false discoveries in genomics" MCQMC 2018, Rennes France, July 2018.

- "Permutation p-value approximation via generalized Stolarsky invariance", Distinguished lecture. IMS-APRM. Singapore. June 2018.

- "Method of moments for large crossed linear mixed models", Invited session on scalable inference, Bayes Comp 2018, Barcelona. March 2018.

- "Method of moments for large crossed linear mixed models". Distinguished Speaker Seminar. VA Tech. September 2017.

- "Quasi-Monte Carlo: a tutorial introduction". Tutorial at opening workshop, SAMSI year on QMC. Duke University. August 2017.

- "Quasi-Monte Carlo beyond the unit cube". Plenary talk. MCM 2017. Montréal. July 2017.

- "Bayesian Empirical Likelihood: a survey". 11th Conference on Bayesian Nonparametrics. Paris. June 2017.

- "On Shapley value for measuring importance of dependent inputs". Statistical Perspectives of Uncertainty Quantification. Georgia Tech. May 2017.

- "Adaptive Importance Sampling". Grid Science Winter School. Santa Fe. January 2017.

- "Sobol' indices: an introduction and some recent results". Invited tutorial at UQ 2016. Lausanne Switzerland. April 2016.

- "Quasi-Monte Carlo". Invited tutorial at MCMSki, Lenzerheide Switzerland. January 2016.

- "Self-concordance for empirical likelihood". Statistical Society of Canada. CJS 2013 best paper award talk. Toronto. May 2014.

- "Monte Carlo and quasi-Monte Carlo for image synthesis". 25th Eurographics Symposium on Rendering. Keynote speaker. Lyon, France. May 2014.

- "Empirical Likelihood". David Sprott Distinguished Lecture. May 2014.

- "New results for the functional ANOVA and Sobol' indices". Department seminar, Georgia Tech. March 2014.

- "Empirical Likelihood". Three lecture invited winter school course. Les Diablerets, Switzerland. February 2014.

- "Monte Carlo, quasi-Monte Carlo and randomized quasi-Monte Carlo". Mathematical Association of America annual meeting. Invited. Baltimore. January 2014.

- "Semi-supervised learning on graphs, using observed correlation structure". Invited. Simons Institute: Theoretical Foundations of Big Data Analysis. November 2013.

- "New results for the functional ANOVA and Sobol' indices". Department seminar (students' choice), University of Michigan, September 2013.

- "Pearson's meta-analysis revisited in a microarray context". Department seminar. University of Pennsylvania. September 2013.

- "Data enrichment for linear regression models". Invited JSM. August 2013.

- "QMC for MCMC: background and recent results". U. Florida Winter Workshop. Invited. January 2013.

- "Bootstrapping r-fold tensor data". Google Stat Foo. Invited. September 2012.

- "Bootstrapping r-fold tensor data". SAMSI Computational Advertising. Invited. August 2012.

- "QMC for MCMC: background and recent results". IMS APRM Meeting. Tsukuba Japan. Distinguished Lecturer. July 2012.

- "Balanced adjusted empirical likelihood". ICSA. Invited. Boston, June 2012.

- "Understanding functions by sampling". Two part invited. Mascot-Num meeting, Bruyéres-le-Châtel France, March 2012.

- "Random projections, reweighting and half-sampling for high dimensional statistical inference". Plenary lecture. MCQMC 2012, Sydney Australia. February 2012.

- "Bootstrapping r-fold tensor data". G.W. Snedecor Lecture. Iowa State University. January 2012.

- "Bootstrapping r-fold tensor data". Banff International Research Station. Invited. December 2011.

- "Modeling and visualization of bivariate power law data". Information Theory and Applications. UCSD. February 2011.

- "Visualizing relationships between long tailed random variables". NIPS 2011 MLOAD workshop. December 2010.

- "Infinitely imbalanced logistic regression". U. Florida Winter Workshop. Invited. January 2010.

Professional service

- Chair organizer, MCQMC 2016 at Stanford University, ∼225 registrants.

- Illinois Institute of Technology, Applied Mathematics Department, external review committee, 2016

- Cornell Dept of Statistical Science, external review committee, 2015

- IMS Fellows committee 2010, 2011, 2012 (chair)

- MCQMC steering committee, 2006 through present

- Program committee member, MCQMC meetings: Hong Kong (2000), Singapore (2002), Juan-Les-Pins (2004), Ulm (2006), Montreal (2008), Warsaw (2010), Sydney (2012), Leuven (2014), Stanford (2016)

- Journal of complexity best paper committee, 2012

- Journal of nonparametric statistics, best paper committee 2009, 2010

- Associate editor, Journal of Uncertainty Quantification, 2018–

- Associate editor, Annals of Applied Statistics, 2012–2017

- Associate editor, Statistica Sinica, 2005–2011

- Associate editor[1], Statistical Science, 1998–2001

- Associate editor, Technometrics 1991–1994

- IMS committee for special invited papers

- IMS new researchers committee, 1989–1990

Consulting

Served as the statistician on a data safety monitoring board for a clinical trial, 2014–2018.
Advised Google on statistical issues regarding "Google Consumer Surveys". That product was highly rated by Nate Silver compared to other surveys for the 2012 election.
Advised Google on methods to counter invalid clicks (clickfraud). That group won an executive management award for impact.
Advised a pharmaceutical company on shelf life and stability of extended release products.

Teaching

Primarily doctoral level applied statistics courses: linear modeling, categorical data, Monte Carlo, consulting and experimental design.

Departmental service

Department Chair 2018–
Lead the statistics long term planning document, 2017
Co-founded and co-direct the Stanford statistics industrial affiliates program.
Served on numerous admission and hiring committees.
Associate chair for 2014/15.

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[1]Effectively an AE though the title was Editor. Leon Gleser was Executive Editor.