

CURRICULUM VITAE YANNIS G. YATRACOS

Citizenships : Greek and Canadian

Address: Faculty of Communication and Media Studies, Cyprus U. of Technology, P.O. Box 50329, Lemesos 3603, Cyprus

Tel: (357) 25-002239(*office*), (357) 25-313262(*home*), (357) 99830338 (*mobile*)

e-mail: yannis.yatracos@cut.ac.cy

Family status: Divorced; one daughter, Eleni

Main Positions held

Sept. 2009-present	Professor (tenured), Cyprus U. of Technology, Faculty of Communication and Media Studies (since October 2015)
Sept. 2005-June 2006	Visiting Scholar, Statistics Department, Harvard University; on sabbatical from N.U.S.
Aug. 1998-June 2010	Professor (tenured), Dept. of Statistics and Applied Probability, National University of Singapore; on leave 2009-2010
June 1995-July 2000	Professor(tenured), Dept. of Mathematics and Statistics, Université de Montréal
April 1993-July 1996	Associate Professor(tenured), Statistics Department, University of California in Santa Barbara; on leave 1995-96
June 1989-May 1995	Associate Professor(tenured), Dept. of Math. and Stat., Université de Montréal; on leave 1993-95
July 1986-June 1990	Assistant Professor(tenure track), Statistics Department, Columbia University; on leave 1988-90
June 1983-July 1986	Assistant Professor(tenure track), Statistics Department, Rutgers University

Administrative Positions

11/2015-10/2018: Deputy Dean, Faculty of Communication and Media Studies, CUT

9/2009-10/2010: Coordinator/Chair, Dept. of Hotel and Tourism, CUT

Awards

Fellow (2007) of the American Statistical Association (ASA)

Fellow (2001) of the Institute of Mathematical Statistics (IMS)

Elected member (1995) of the International Statistical Institute (ISI)

Meritorious Teaching Award 1999/2000, Faculty of Science, National University of Singapore

Mathematical Contest in Modeling Team Award (2007): mentored the N.U.S. students Bolun Liu, Xuan Hou and Hao Wang who obtained an **outstanding award** (the top 1% of teams).

Membership in professional associations

Associate member (ASA) (since 1994) of the Society of Actuaries

Member: American Statistical Association, International Statistical Institute

Education

Ph.D. in Statistics, University of California, Berkeley, U.S.A. Title : “On the existence of uniformly consistent estimates and rates of convergence via minimum distance methods”.

Advisor: Professor Lucien Le Cam.

M.Sc. in Statistics, University of London (L.S.E.), England

B.Sc. in Mathematics, University of Athens, Greece

Research interests-Work published/submitted/in preparation

Non-parametric estimation: Construction of estimates of a density or a regression type function with rates of convergence for independent and dependent observations.

Prediction: Prediction and estimation of a random function of a parameter with applications in estimation of quantities related with the rare species of a population.

Robustness: Determination of neighborhoods in Tukey’s poly-efficiency.

Maximum likelihood estimation: Decision theoretic justification. MLE’s inherent bias pathology, model corrected MLE and the connection with Wallace’s MML method.

Bootstrap: Assessing the accuracy of bootstrap samples and estimates.

Cluster Detection and Analysis of Variance: Clustering and the notion of variance. Projection pursuit exploration to detect data clusters and remote outliers.

Decision Theory: Shrinkage of U-statistics obtained with artificial augmentation of the sample size. Pitman’s closeness criterion and shrinkage estimates of the variance and the SD. Stein’s phenomenon for smooth densities.

Matching and Causal inference: Matching and equal percent bias reduction methods. Balancing Scores for Simultaneous Comparisons of Multiple Treatments. Monotone imbalance bounding matching methods. Bias Reduction with Variable Percent Bias Reducing matching.

Actuarial Science: Stop-loss indices in insurance.

Statistical/Mathematical Finance: Information in stock prices and Market’s informational efficiency. Risk neutral probability via Le Cam’s statistical experiments without stock-price model assumptions. The fair price of a European option and Bayes risk.

Deconvolution: Plug-in convergence rates for estimates of a mixing density in R^d and for its derivatives.

Research Articles Published

(1) (1985) On the existence of uniformly consistent estimates. *Proc. Amer. Math. Soc.* **94**, **3**, 479-487.

(2) (1985) Rates of convergence of minimum distance estimators and Kolmogorov’s entropy. *Ann. Statist.* **13**, **2**, 768-774.

(3) (1988) A lower bound on the error in nonparametric regression type problems. *Ann. Statist.* **16**, **3**, 1180-1187.

- (4) (1988) A note on L_1 consistent estimation. *Canad. J. Statist.* **16**, **3**, 283-292.
- (5) (1989) On the estimation of the derivatives of a function via the derivatives of an estimate. *J. Multiv. Anal.* **28**, **1**, 172-175.
- (6) (1989) A regression type problem. *Ann. Statist.* **17**, **4**, 1597-1607.
- (7) (1991) A note on Tukey's poly-efficiency. *Biometrika* **78**, **3**, 702-703.
- (8) (1991) On the species and related problems. *Stat. and Prob. Let.* **12**, **3**, 209-212.
- (9) (1992) L_1 optimal estimates of a regression type function in R^d . *J. Multiv. Anal.* **40**, **2**, 213-220.
- (10) (1992) On prediction and mean squared error. *Canad. J. Statist.* **20**, **2**, 187-200.
- (11) (1995) On the rare species of a population. *J. Stat. Plan. & Inf.*, **48**, **3**, 321-329.
- (12) (1996) Linear least squares regression: A different view. *Stat. & Prob. Letters* **29**, **2**, 143-148.
- (13) (1996) (With G. Roussas) Minimum distance regression-type estimates with rates under weak dependence. *Ann. Inst. Stat. Math.* **48**, **2**, 267-281.
- (14) (1997)(With G. Roussas) Minimum distance estimates with rates under ϕ -mixing. *Festschrift for Lucien Le Cam: Research Papers in Probability and Statistics*, p. 337-345. Editors: D. Pollard, E. Torgersen, G. L. Yang. Springer, New York.
- (15) (1997)(With T. Nicolieris) Rates of convergence of estimates, Kolmogorov's entropy and the dimensionality reduction principle, in regression. *Ann. Statist.* **25**, **6**, 2493-2512.
- (16) (1998) Variance and Clustering. *Proc. Amer. Math. Soc.* **126**, **4**, 1177-1179.
- (17) (1998) A small sample optimality property of the MLE. *Sankhya Ser. A*, **60**, 90-101.
- (18) (2001) L_1 estimates of an additive regression type function under dependence. *Asymptotics in Statistics and Probability. Papers in Honor of George Gregory Roussas*, p. 393-400, Editor: M.L. Puri, VSP International Science Publishers, The Netherlands.
- (19) (2002) Assessing the quality of bootstrap samples and of the bootstrap estimates obtained with finite resampling. *Stat. & Prob. Let.* **59**, **3**, 281-292.
- (20) (2004) (With Wang W.) A stop-loss risk index. *Ins.: Math. & Econ.* **34**, **2**, 241-250.
- (21) (2004) Dependence and the dimensionality reduction principle. *Ann. Inst. Stat. Math.* **56**, **2**, 265-277.
- (22) (2005) Artificially augmented samples, shrinkage and MSE reduction. *JASA* **100**, 1168-1175.
- (23) (2006) On consistent statistical procedures in regression. *Ann. Inst. Stat. Math.* **58**, **2**, 379-387.
- (24) (2007) (With Wang, W.) Representation of moments using lower-order conditional moments. *J. Stat. Plan. & Inf.* **137**, 299-305.
- (25) (2009) The asymptotic distribution of a cluster index for i.i.d. normal random variables. *Ann. Appl. Probab.* **19**, **2**, 585-595.
- (26) (2012) (With G. Biau) On the shrinkage estimation of variance and Pitman closeness criterion for large samples. *Journal of the French Statistical Society* **153**, **1**, 5-21.
- (27) (2012) Concerns on Monotonic Imbalance Bounding Matching Methods. Online supplement to "Multivariate Matching Methods that are Monotonic Imbalance Bounding (MIB)" by Iacus, S. M., King, G. and Porro, G., *JASA*, 2011, **106**, p. 345-361, with authors' response. <http://arxiv.org/abs/1301.0891>
- (28) (2013) Equal percent bias reduction with moment conditions and mean-covariance

preserving matching. *Ann. Inst. Stat. Math.* **65**, **1**, 69-87.

(29) (2013) Detecting clusters in the data from variance decompositions of its projections. *Journal of Classification* **30**, **1**, 30-55.

(30) (2015) MLE's bias pathology, model updated MLE and Wallace's minimum message length method. *IEEE Transactions on Information Theory* **61**, **3**, 1426-1431.

(31) (2015) Balancing Scores for Simultaneous Comparisons of Multiple Treatments. *Stat. & Prob. Let.* **107**, 178-182.

(32) (2016) Bias Reduction with Variable Percent Bias Reducing Matching. *Stat. & Prob. Let.* **110**, 181-184.

Other Publications

(33) (2001) (With Puri M. L.) G. G. Roussas: Biographical Sketch. *Asymptotics in Statistics and Probability. Papers in Honor of George Gregory Roussas*, Editor: M.L. Puri, VSP International Science Publishers, The Netherlands.

(34) (2011) A contribution to "A Tribute to David Blackwell". *AMS Notices* **58**, 922.

Articles pending/under revision/in preparation.

(35) Information in the Model-Free Stock Prices and Some Consequences. Submitted to *Mathematics and Financial Economics*; <http://arxiv.org/pdf/1501.07473v2.pdf>.

(36) A relevant S -Matching classifier for the Covariate Shift Machine Learning problem. Submitted to *IEEE Transactions in Information Theory*. Under revision.

(37) Stein's phenomenon for smooth densities. Under revision.

(38) Plug-in error bounds for a mixing density estimate in R^d , and for its derivatives. Submitted to the *IEEE Transactions in Information Theory*; <http://arxiv.org/pdf/1510.06940v1.pdf>.

Technical Reports

(40) Option pricing, Bayes risk and applications. Major revision. <http://arxiv.org/abs/1304.5156>.

(41) A new method to obtain risk neutral probability, without stochastic calculus and price modeling, confirms the universal validity of the Black-Scholes-Merton formula and volatility's role. <http://arxiv.org/abs/1304.4929>

Research students

(1) Sagris, Anthony (M.Sc. 1992, Univ. de Montréal). On the estimation of a random function of a parameter.

(2) Nicolieris, Theodore (Ph.D. 1995, Univ. de Montréal). Selected topics in estimation. Co-director: N. Giri.

(3) Ong, Chin Chin (M.Sc. 7/2000, NUS) A finite sample optimality property of NPMLE.

(4) Cheng, Wee Keong (M.Sc. 5/2001, NUS) On nonparametric estimation.

(5) Wang, Wei (M.Sc. 11/2003, NUS) Moment identities-An application in Insurance.

(6) Ou, Baolin (M.Sc. 4/2004, NUS) A method for clustering group means with analysis of variance.

(7) Song, Gek Leng (Honors project 2004, NUS) Multiple imputation methods.

(8) Hou, Xuan (Honors project, 2009, NUS) Caliper matching methods with multivariate

normal distribution.

Courses taught

B.Sc. level: linear algebra, advanced calculus, probability, statistics, survey sampling, life insurance mathematics I, II, theory of risk, applied statistics, statistics for business, probability and statistics (for engineers and computer scientists), mathematical statistics

Ph.D. level: probability, estimation, hypothesis testing, asymptotic methods

Conference Organisation

- Member of the organising committees for the thematic year in Statistics(1997-98) and in particular the Symposium on Functional Estimation(October 13-24, 1997), Mathematics Research Center in Montreal.
- Coordinator of the organising committee of the week of Statistics(7-11 May 1990), Mathematics Research Center in Montréal .

Membership in Committees

At Rutgers University: Hiring Committee(1984-85)

At Columbia University: Hiring Committee(1986-87), Colloquium Committee(1987-88)

At Université de Montréal: Colloquium Committee(1989-90, 1991-93, 1995-96), Statistics Program Committee (1995-96, 1997-98), Actuarial Program Committee (1995-98).

At UC Santa Barbara: Hiring Committee(1993-94), Colloquium Committee(1994-95).

At NUS: Hiring Committee(1999-2001, 2006-2008), Establishment Committee (2000-2001), Research Committee(2000-2001), Teaching Excellence Committee (2002-2004), Student Exchange Program Coordinator (2002-2004)

Referee for : Annals of Statistics, Annals of the Institute of Statistical Mathematics, Biometrics, JASA, Statistics and Probability Letters, Proceedings American Mathematical Society, Journal of Multivariate Analysis, Journal of Statistical Planning and Inference, IEEE Transactions on Information Theory, Information Fusion, Journal of Risk and Insurance, Computational Statistics, Bernoulli, Austrian Journal of Statistics

Proposal evaluation for : NSF, AMS, NSERC, FCAR.

Invited Conference presentations

(9) (2004) “Dependence and the dimensionality reduction principle” Invited speaker at the conference of the International Chinese Statistical Association, in Singapore.

(8) (2001) “Clusters, Variance and Projection Pursuit” Presentation after invitation at the Conference on Asymptotic Methods in Statistics and Probability in honor of George G. Roussas, in U. C. Davis.

(7) (1996) “Rates of convergence of estimates, Kolmogorov’s entropy and the dimensionality reduction principle in regression” Invited speaker in the conference to honor C. R. Rao, organised by IASIO in Montreal.

(6) (1996) “Rates of convergence of estimates, Kolmogorov’s entropy and the dimensionality reduction principle in regression” Invited speaker at the Western Regional Meeting of the Institute of Mathematical Statistics and the Biometric Society in Pullman.

- (5) (1995) “A small sample optimality property of the MLE” Presentation after invitation at the Conference on Likelihood, Asymptotics and Neo-Fisherian Inference in Brixen.
- (4) (1995) “Prediction, mean squared error and maximum likelihood” Invited speaker at the International Conference in Applied Probability and Time Series, in Athens.
- (3) (1994) “A small sample optimality property of the MLE” Presentation after invitation in the 16th International Conference on Stability Problems of Stochastic Models in Eger.
- (2) (1986) “A note on the estimation of a regression type function” Invited speaker at the Western Regional Meeting of the Institute of Mathematical Statistics and the Biometric Society in Seattle.
- (1) (1983) “Rates of convergence of minimum distance estimates and Vapnik-Cervonenkis exponents” Invited speaker in the 7th Congress of Balcan Mathematicians in Athens.

Other Conference presentations

- (8) (2009) “Modeling stock price returns and pricing a European option with Le Cams statistical experiments” Presented at the Third International Conference on Computational and Financial Econometrics, in Limassol, Cyprus.
- (7) (1997) “Assessing the quality of bootstrap samples and estimates” Presented at the conference on Industrial Statistics, in Athens.
- (6) (1992) “Dimensionality reduction in linear least squares regression” Congress on Data Analysis and Robustness in Ascona.
- (5)(1991) “On prediction and mean squared error” The 19th European meeting of Statisticians in Barcelona.
- (4) (1989) “ L_1 estimation of a regression type function in R^d ” Meeting on Statistics, Earth and Space Sciences in Leuven.
- (3) (1989) “Mean squared error estimation of a random function of a parameter” Western Regional meeting of the Institute of Mathematical Statistics at Davis.
- (2) (1987) “Estimates and rates of convergence in a nonparametric regression type problem” The 17th European Meeting of Statisticians in Thessaloniki.
- (1) (1983) “Rates of convergence of minimum distance estimators and Kolmogorov’s entropy” Annual conference of the Statistical societies at Toronto.

Participation in workshops(after invitation)

- (3) (1990) “Nonparametric Functional Estimation”, NATO Institute of Advanced Studies, Spetses.
- (2) (1989) NSF regional conference in Functional Estimation, U.C. Davis.
- (1) (1989) “Diagnostics quarter”, Department of Applied Statistics, University of Minnesota at Saint Paul.

More than 35 talks have been given at Universities in Asia, Europe and North America.

Research grants

- Individual:* 2010-2012 Start-up grant from CUT, Euros 85,000 (for the period)
- Individual:* 1999-2003 From the NSERC of Canada, CAD 48,000 (for the period).
- Individual:* 1989-99 From the NSERC of Canada, CAD 105,000 (for the period).
- Individual:* 1995 From the Society of Actuaries, USD 2,500.

Team grant: 1989-92 From the FCAR of Quebec, CAD 150,000.

Team grant: 1986-89 From the Hellenic Government, USD 25,000 (with G. Roussas).

Team grant for equipment: 1990,1991,1995 From NSERC and CAFIR, CAD 61,488.

Team grant: 1997-98 Workshop in Functional estimation. Funded from the Mathematics Research Center in Montreal and NSERC, CAD 35,000.