



Europass **Curriculum Vitae**

Personal information

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Nationality
Gender
Work experience

DIMITRIS KARLIS

+30 210 8203920
karlis@aueb.gr
Greek
Male

Dates Occupation or position held Main activities and responsibilities Name and address of employer Type of business or sector

December 2001 - onwards Professor (since 2015) Research and teaching in the field of statistics. Dept of Statistics, Athens University and Economics, Patission Str., 76 Greek Public University

Dates

Occupation or position held Main activities and responsibilities Name and address of employer Type of business or sector

September 2007 - today BoD member Frontier Science Foundation Hellas Research and teaching in the field of biostatistics,. 116 Papadiamantopoulou str, Athens Non-for profit cicil organization

Dates

Occupation or position held Main activities and responsibilities Name and address of employer Type of business or sector

September 2006 - onwards Tutor Research and teaching in the field of Quantitative Methods Greek Open University, School of Social Sciences, Patras Greek Public University

Education and training

1994 - 1998

Dates Title of qualification awarded PhD in Statistics Principal subjects/occupational skills Applied Statistics and Computational Statistics (supported from the State Scholarships Foundation of covered Greece). Title: "Estimation and Testing Problems in Poisson Mixtures" Supervisor: Prof. Evdokia Xekalaki External Examiners: Sir David Cox, Prof. Bruce Lindsay Name and type of organisation Department of Statistics, Athens University of Economics and Business providing education and training Page 1/7 - Curriculum vitae of For more information on Europass go to http://europass.cedefop.europa.eu Dimitris Karlis © European Communities, 2003 20060628

1988 - 1992 Dates Title of qualification awarded **Bachelor in Statistics** Name and type of organisation Department of Statistics, Athens University of Economics and Business providing education and training Personal skills and competences Mother tongue(s) Greek Other language(s) Self-assessment Understanding Writing Speaking Listening European level (*) Reading Spoken interaction Spoken production English C2 Proficient User French Basic User Basic User Basic User Basic User Basic User (*) Common European Framework of Reference for Languages - Deep knowledge of SAS and R Computer skills and competences - Good knowledge on Python -Knowledge of other statistical packages (SPSS, MINITAB, SAS, R) - Programming languages (PASCAL, FORTRAN) - Office (Word processors, spread-sheets, databases, html pages etc) Participation in the following projects: Additional information Related to Biostatistics: TransHERA related research on translational projects form the HERA projects: Jan 2008 – Dev 2016 Statistical analysis for genomics data from the HERA trial Statistical Support ETOP: Jan 2013- today • Design of clinical trials Statistical analysis on data from clinical trials, including Data Monitoring Committee Reports Support on Observation studies Analysis of the surveillance and monitoring data on zoonotic agents in EU, EFSA, 2010-2012 Analysis using R and SAS of related Data Visualizations with R Document writing **Other Projects** Integration of Statistical Software in Eurostat's Data Bases (SUP-COM 17) January 1998-• November 1998 IST-99-1-1A - Proposal No 12134 : Extended Statistical Information System January 2000 -• December 2002 Virtual-Library for Computer Assisted Training in Statistics (VL-CATS, in IST-FP5) January 2001 - December 2003 Methodological Analysis of LUCAS 2001 results (Eurostat-funded) January 2002 -• December 2002 Digital Era Statistical Indicators(IST-2000-31083) February 2004-January 2006 Building up the INTRASTAT statistical system in Romania - (Key Expert) August 2006 -• September 2007 Technical Assistance To The National Statistics Offices Of Albania And Its Regional Offices • (senior expert) November 2007

- Methodological help-desk support and communication, Eurostat 2011-2012
- Analysis of the surveillance and monitoring data on zoonotic agents in EU, EFSA, 2010-2012
- Integrated system of European Social Surveys generalisation of the existing framework to cover longitudinal and other complex aspects. Eurostat, 2014-2016
- 1. Publications in Journals
- 2. Karlis D., Xekalaki E. (1999) On testing for the number of components in finite Poisson mixtures. Annals of the Institute of Statistical Mathematics, 51, 149-161.
- 3. Karlis D., Xekalaki E. (1998) Minimum Hellinger distance estimation for finite Poisson mixtures. Computational Statistics and Data Analysis, 29, 81-103.
- 4. Karlis D., Xekalaki E. (1999). Improving the EM algorithm for mixtures. Statistics and Computing, 9, 303-307.
- Diamantidis N., Karlis D., Giakoumakis M. (2000) Unsupervised stratification of cross-validation for accuracy estimation. Artificial Intelligence, 116, 1-16.
- 6. Karlis D., Xekalaki E. (2000) A Simulation Comparison of Several Tests for the Poisson Distribution. Journal of the Royal Statistical Society Series D, The Statistician, 49, 355-382
- 7. Karlis D. and Ntzoufras J. (2000). On Modelling Soccer Data. Student ,3, 229-245.
- 8. Karlis D., Xekalaki E. (2001) Robust Testing And Diagnostics For Finite Poisson Mixtures Journal of Statistical Planning and Inference, 93, 93-115
- 9. Dellaportas P., Karlis D. (2001) A simulation approach to hierarchical models. International Statistical Review 69, 63-79.
- 10. Karlis, D. (2002) A general EM approach for maximum likelihood estimation in Mixed Poisson Regression Models. Statistical Modelling : An International Journal, 1, 305 318.
- Karlis D., (2002). An EM Type Algorithm for ML estimation for the Normal –Inverse Gaussian Distribution. Statistics and Probability 57, 43-52
- Karlis D., Xekalaki E. (2003) Choosing initial values for the EM algorithm for finite mixtures Computational Statistics and Data Analysis, 41, 577-590
- Karlis, D. Kostaki, A. (2002) Bootstrap Techniques for Mortality Models Biometrical Journal, 44, 696-712.
- 14. Karlis D. (2003) An EM Algorithm for Multivariate Poisson Distribution and Related Models. Journal of Applied Statistics, 30, 63-77.
- 15. Karlis, D., Saporta, G. and Spinakis A. (2003) A Simple Rule for the Selection of Principal Components. Communications in Statistics- Theory and Methods, 32, 643 –666.
- Karlis D., Xekalaki E. (2003) A Zero frequency alternative method to the moment method of estimation in Finite Poisson Mixtures, Journal of Statistical Computation and Simulation, 73, 409-427.
- 17. Iliopoulos, G. and Karlis, D. (2003) Simulation from the Bessel distribution with applications. Journal of Statistical Computation and Simulation, 73, 491-506
- Karlis, D. (2003) Maximum Likelihood Estimation for Multivariate Shock Models. Annals of the Institute of Statistical Mathematics, 55, , 817-830
- Karlis, D and Ntzoufras, J. (2003) Analysis of Sports Data Using Bivariate Poisson Models. The Statistician, 52, 381-393
- 20. Tsiamyrtzis, P. and Karlis, D. (2004) Strategies for efficient computation of multivariate probabilities. Communications in Statistics Simulation and Computation, 33, 271 –293.
- Brijs, T., Karlis, D., G. Swinnen, K. Vanhoof and G. Wets and Manchanda, P. (2004) A Multivariate Poisson Mixture for Marketing Applications. Statistica Neerlandica, 58, 322-348.
- 22. Frangos, N. and Karlis, D. (2004) Modelling Losses using a Exponential-Inverse Gaussian Distribution. Inusrance: Mathematics and Economics, 35, 53-67
- Karlis, D. and Lillestol, J. (2004) Bayesian estimation for the NIG distribution Applied Stochastic Models in Business and Industry, 20,323-338.
- 24. Karlis, D. and Xekalaki, E. (2005) Mixed Poisson Distributions. International Statistical Review, 73, 35-58
- 25. Karlis, D. (2005) An EM algorithm for mixed Poisson distributions. ASTIN Bulletin, 35, 3-24
- Ntzoufras, I., Katsis, A. and Karlis, D. (2005) Bayesian Assessment of the Distribution of Insurance Claim Counts Using Reversible Jump MCMC. North American Actuarial Journal, 9, 90-108
- 27. Karlis, D. and Meligkotsidou, L. (2005) Multivariate Poisson Regression with Structure. Statistics and Computing, 15, 255-265
- Karlis D. and Ntzoufras J. (2005). Bivariate Poisson and Diagonal Inflated Bivariate Poisson Regression Models R. Journal of statistical Software, vol 14, issue 10.
- 29. Iliopoulos, G., Karlis, D. and Ntzoufras, J. (2005). Bayesian estimation in Kibble's bivariate gamma distribution. Canadian Journal of Statistics, 33, 571-589

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- Geurts, K., Wets, G., Brijs, T, Van Hoof, K., Karlis, D. (2006) Ranking And Selecting Dangerous Crash Locations: Correcting For The Number Of Passengers And Bayesian Ranking Plots. Journal of Safety Research, 37, 83-91
- Brijs, T., Karlis, D., van den Bossche and Wets, G. (2006) A Model for Identifying and Ranking Dangerous Accident Locations: A Case-Study in Flanders. Statistica Neerlandica, 60, 457-476
- Karlis, D. and Meligkotsidou, L. (2007) Finite multivariate Poisson mixtures with applications. Journal of statistical Planning and Inference, 137, 1942-1960
- Karlis, D. and Patilea, V. (2007) Confidence Intervals of the hazard function for discrete distributions using mixtures. Computational statistics and Data Analysis, 51, 5388-5401
- Nikoloulopoulos, AK, and Karlis, D. (2008) On modeling count data: a comparison of some well known discrete distributions Journal of Statistical Computation and Simulation, 78, 437-457
- 36. Karlis, D., Rahmouni, M. (2007) Analysis of Defaulters' Behavior Using Poisson-Mixture Approach . IMA Journal of Mathematics in Management , 18, 297-311
- Brijs, T., Karlis, D, Vad der Bosche, P and Wets, G. (2007). Bayesian Ranking of accident sites Journal of the Royal statistical Society, Series A 170, 1001-1017
- Nikoloulopoulos, A.K and Karlis, D. (2008) Fitting copulas to bivariate earthquake data: the seismic gap hypothesis revisited. Environmetrics, 2008; 19: 251–269
- Karlis, D. And Tsiamyrtzis, P. (2008). Exact Bayesian Inference for bivariate Poisson models Statistics and Computing, 18, 27-40
- Karlis, D. and Patilea, V. (2008). Bootstrap confidence intervals intervals in mixtures of discrete distributions. Journal of Statistical Planning and Inference, 138, 2313-2329
- 41. Pavlopoulos, H. and Karlis, D. (2008) INAR(1) Modelling of Overdispersed Count Series with an Environmental Application. Environmetrics, 19, 369-393
- Karlis, D., Vasdekis, VSG, Banti, M. (2009) Heteroscedastic Semiparametric models for Domestic Water Consumption, Ecological and Environmental Statistics, 16, 355-267
- Nikoloulopoulos, A.K. and Karlis, D. (2008) Copula model evaluation based on parametric bootstrap Computational Statistics and Data Analysis,52, 3342-3353
- Karlis, D. and Santourian, A. (2009) Model Based Clustering with non-elliptically contoured distributions Statistics and Computing, 19, 73-83
- Brijs, T., Karlis, D. and Weets, G. (2008) An Integer Autoregressive Model to Study the Effect of Weather Conditions on Daily Car Accident Counts Accident analysis and Prevention, 40, 1180-1190
- Karlis, D. and Ntzoufras, I. (2008) Bayesian modelling of football outcomes: Using the Skellam's distribution for the goal difference IMA Journal of Mathematics in Management, 20, 133-145
- 47. Nikoloulopoulos, A.K. and Karlis, D. (2008). Multivariate logit copula model with an application to dental data Statistics in Medicine, 27, 6393-406
- Karlis, D. (2008) A note on the estimation of the Exponential Poisson distribution, a nested EM algorithm. Computational Statistics and Data Analysis, 53, 894-899
- 49. Nikoloulopoulos, A.K. and Karlis, D. (2009) Finite normal mixture copula for m odeling multivariate discrete data. Journal of Statistical Planning and Inference, 139, 3878-3890
- 50. Nikoloulopoulos, A.K. and Karlis, D. (2010).Regression in a copula model for bivariate count data. Journal of Applied Statistics, 37, 1555-1568
- 51. K. Fragiadakis, D. Karlis and S. G. Meintanis (2009) Tests of Fit for Normal Inverse Gaussian Distributions. Statistical Methodology, 6, 553-564
- Orfanogiannaki, K., Karlis, D. and Papadopoulos, J. (2009) Identifying seismicity patterns using Poisson Hidden Markov Models Pure and Applied Geophysics, 167, 919-931
- Nikoloulopoulos, A.K. and Karlis, D. (2010). Modelling multivariate count data using copulas Communications in statistics, Simulation and Computation, 39, 172-187
- 54. Andersson J. and Karlis D. (2009) Treating missing values in INAR model with an application to syndromic surveillance Journal of Time Series Analysis, 31, 12-19
- 55. Pedeli, X. and Karlis, D. (2010) A bivariate Poisson INAR(1) model with application (to appear in Statistical Modelling)
- 56. Karlis, D. and Ntzoufras, I. (2011) Robust fitting for football prediction models. IMA Journal of Mathematics in Management, 22, 171-182
- Ng, C.T., Joe, H., Karlis, D. amd Liu, J (2011) Composite Likelihood Methods For Time Series Models With A Latent Autoregressive Process Statistica Sinica 21, 279-305
- Bermudez, L. and Karlis, D. (2011) Bayesian multivariate Poisson models for assuming dependence in a ratemaking procedure, Insurance: Mathematics and Economics, 48, 226-236
- 59. Pedeli, X. and Karlis, D. (2012). On estimation for the bivariate Poisson INAR process Communications in Statistics, Simulation and Computation, 42,3, 514-533

- Perakis, K, Karlis, D, Cools, M., Jansen, D., Van Hoof, K. and Wets, G. (2011) A Bayesian Approach for Modeling Origin-Destination Matrices Transportation Research, Part A, Vol 46, 200-212
- 61. Wikström, P-O.H., Tseloni, A. and Karlis, D. (2011) Do people comply with the law because they fear getting caught? European Journal of Criminology, 8, 401-420
- Bermudez, L. and Karlis, D. (2012) A finite mixture of bivariate Poisson regression models with an application to insurance ratemaking. Computational Statistics and Data Analysis 56, 3988-3999
- 63. Fragiadakis, K. , Karlis, d. and Meintanis, S. (2011) Inference procedures for the variance gamma model and applications, Journal of Statistical Computation and Simulation (to appear)
- 64. Pedeli, X. and Karlis, D. (2012) On composite likelihood estimation of a multivariate INAR(1) model. Journal of Time Series Analysis (to appear)
- 65. Arakelian, V. and Karlis, D. (2013) Clustering dependencies via mixtures of copulas (to appear in Communications in Statistics, Simulation and Computation).
- 66. Karlis, D. and Pedeli, X. (2013) Flexible bivariate INAR(1) model using copulas. (to appear in Communications in Statistics, Theory and Methods)
- Ghitany, M., Karlis, D., Al-Mutiari, D. and Al-Awhadi, F. (2013) Expectation-Maximization algorithm for multivariate mixed Poisson regression models and its application Applied Mathematical Sciences, 6. 6843 – 6856
- Poulopoulou, S., Karlis D and Dafni, U., Yiannoutsos, C. (2013) Phase II Design with Sequential Testing of Hypotheses within Each Stage Journal of Biopharmaceutical Statistics, 24, 768-784
- 69. Pedeli, X. and Karlis, D. (2013) Some properties of multivariate INAR(1) processes Computational Statistics and Data Analysis, 67, 213-225
- Andersson, J. and Karlis, D. (2014) A Parametric Time Series Model with Covariates for Integers in Z. Statistical Modeling Journal, 14 (2), pp. 135-156
- Perrakis, K., Karlis, D, Cools, M. and Janssen, D. (2014) Bayesian inference for transportation origin-destination matrices: the Poisson-inverse Gaussian and other Poisson mixtures (to appear in Journal of the Royal Statistical Society, Series A, 178, 271-296
- Orfanogiannaki, K., Karlis, D. and Papadopoulos, G. (2014) Identification of temporal patterns in the seismicity of Sumatra using Poisson Hidden Markov Models. Research in Geophysics (to appear)
- 73. Meintanis, S.G. and Karlis, D. (2014) Validation Tests for the Innovation Distribution in INAR Time Series Models Computational Statistics, 29, 1221-1241
- 74. O'Hagan,A., Murphy,B., Gormley, C., McNicholas, P. and Karlis, D. (2014) Clustering with the Multivariate Normal Inverse Gaussian Distribution Computational Statistics and Data Analysis, 10.1016/j.csda.2014.09.006.
- 75. Dafni, U., Karlis, D., Smit, E., Peters, S. (2014) Second line treatment for EGFR wild-type advanced NSCLC: The Jury is Still Out (Letter), Lung Cancer, 84(3), 314-315
- 76. Dafni, U., Karlis, D., Smit, E., Peters, S. (2014) Second line treatment for EGFR wild-type advanced NSCLC: The Jury is Still Out (Letter), Lung Cancer, 84(3), 314-315
- 77. Chesneau, C., Kachour, M. and Karlis, D. (2015) On some distributions arising from a generalized trivariate reduction scheme. Statistical Methodology, 25, 36-50
- Kosmidis, I. and Karlis, D. (2016) Model Based clustering using copulas. Statistics and Computing 26, 1079-1099
- 79. Bermudez, L. and Karlis, D. (2015) A posteriori ratemaking using bivariate Poisson models. Scandinavian Actuarial journal (accepted)
- Karlis, D., Papatla, P, Roy, S. (2016) Finite Mixtures of Censored Poisson Regression Models. Statistica Neerlandica, 70, 100-122
- Sherene Loi, Urania Dafni, Dimitris Karlis, Varvara Polydoropoulou, Brandon M. Young, Scooter Willis, Bradley Long, Evandro de Azambuja, Christos Sotiriou, Giuseppe Viale, Josef Rüschoff, Martine J. Piccart, Mitch Dowsett, PhD13; Stefan Michiels, PhD14; Brian Leyland-Jones, (2016) Effects of Estrogen Receptor and Human Epidermal Growth Factor Receptor-2 Levels on the Efficacy of Trastuzumab A Secondary Analysis of the HERA Trial JAMA Oncologu, 2(8), 1040-1047
- Orfanogiannaki, K. and Karlis, D. (2017) Multivariate Poisson Hidden Markov models with a case study of modelling seismicity. Australian and New Zealand Journal of Statistics (to appear)
- Bermúdez, L.,Karlis, D. and Santolino, M. (2017) A finite mixture of multiple discrete distributions for modelling heaped count data Computational Statistics & Data Analysis 112, 14-23
- D Karlis, G Tzougas, N Frangos (2017) Confidence intervals of the premiums of optimal bonus malus systems, Scandinavian Actuarial Journal, 1-16

- 85. Bermudez, L., Guillen, M. and Karlis, D. (2018) Allowing for time and cross dependence assumptions between claim counts in ratemaking models, Insurance Mathematics and Economics (forthcoming)
- Antonios K. Alexandridis, Dimitrios Karlis, Dimitrios Papastamos & Dimitrios Andritsos (2018) Real Estate valuation and forecasting in non-homogeneous markets: A case study in Greece during the financial crisis. Journal of the Operational Research Society, DOI: 10.1080/01605682.2018.1468864
- Bermúdez, L.,Karlis, D. and Santolino, M. (2018) A discrete mixture regression for modeling the duration of non-hospitalization medical leave of momotor accident victims. Accident Analysis & Prevention 121, 157-165
- Cherny, N. I., de Vries, E. G., Dafni, U., Garrett-Mayer, E., McKernin, S. E., Piccart, M., ... & Bogaerts, J. (2018). Comparative Assessment of Clinical Benefit Using the ESMO-Magnitude of Clinical Benefit Scale Version 1.1 and the ASCO Value Framework Net Health Benefit Score. Journal of Clinical Oncology, 37(4), 336-349.
- Willis, S., Polydoropoulou, V., Sun, Y., Young, B., Tsourti, Z., Karlis, D., ... & Győrffy, B. (2018). Exploratory Analysis of Single-Gene Predictive Biomarkers in HERA DASL Cohort Reveals That C8A mRNA Expression Is Prognostic of Outcome and Predictive of Benefit of Trastuzumab. JCO Precision Oncology, 2, 1-12.

Publications in Edited Volumes

- 1. Karlis, D and Xekalaki, E. (2003). Mixtures everywhere. In Stochastic Musings, ed J. Panaretos, pp 78-95.
- Brijs, K., Vanhoof, K., Brijs, T. and Karlis, D (2006) Using Fuzzy Set Theory to Assess Countryof-Origin Effects on the Formation of Product Attitude. In Modelling Decisions in Artificial Intelligence, Lecture Notes in Computer Science (Artifical Intelligence), vol 3558, eds Torra, Vicenç; Narukawa, Yasuo; Miyamoto, Sadaaki, pp 138-149, Springer-Verlag Berlin-Heidelberg
- Karlis, D. and Xekalaki, E. (2008) The Polygonal Distribution, In. Advances in Mathematical and Statistical Modeling in Honor of Enrique Castillo Arnold, B. C., Balakrishnan, N, Minués, M and Sarabia, J. M. (eds), Birkhauser: Boston, 21-33
- Karlis, D. (2015) Modelling multivariate times series for counts. In Handbook of Discrete-Valued Time Series, edited by Richard A. Davis, Scott H. Holan, Robert Lund, Nalini Ravishanker, CRC Press, ISBN 9781466577732
- 5. Karlis, D. (2019) Mixtures of discrete distributions. In Handbook of mixture models.

Books

- 1. Καρλής, Δ., Πολυμεταβλητή Στατιστική Ανάλυση (2005, Εκδόσεις Σταμούλη)
- Καρλής, Δ. και Ντζούφρας, Ι. Εισαγωγή στον Προγραμματισμό με R. (2015, Εκδόσεις Κάλλιππος)

Other Activities

- Erasmus Scholarship for University of Sheffield, Departments of Probability and Statistics (January April 1992)
- Scholarship from Greek Scholarship Foundation for Phd research in Applied Statistics (1993-1998)
- Member of the American Statistical Association
- Member of the International statistical Institute
- Member of the International Biometric Society Eastern Mediterranean Region
- Reviewer για το Zentralblat MATH (19 reviews).
- Member of the Greek Statistical Institute
- Member of the Organizing Commitee of the 17th Workshop on Statistical Modelling in Chania (July 2002)
- Member of the jury of the Ph D presentation of Tom Brijs, Limburg Univeristy, Belgium.
- Member of the jury of the Ph D presentation of Veanous Arakelian, Athens University of Economics Greece
- Visitor in Limburg University, Belgium (January- February 2003)
- Member of the Organizing Committee of the 17th Greek Statistical Conference in Lefkada (April 2004)
- Member of the Organizing Committee of the 3rd EMR-Biometrics Conference in Kerkira (May 2005)
- Chair of the organizing Committee of the 7th Mathsports International Conferecne, Athens (July 2019)
- Invited Speaker in the TRB2006 conference, Washington DC, session of time series

	 Member of the Organizing Committee of the ISCB conference in Alexandroupolis (July 2007) Member of the Organizing Committee of the 6rd EMR-Biometrics Conference in Crete (May 2011) Member of the jury of the PhD presentation of Ms Sonia Malefaki, University of Peireaus, Greece (Septmeber 2008) Member of the jury of the PhD presentation of Mr Kostas Fragiadakis, Athens University, Greece (September 2009) Member of the jury of the PhD presentation of Mr Shaochuan Lu, School of Mathematics, Statistics and Operations Research, Victoria university of Wellington, New Zealand Publicity Officer of the EMR-IBS (2007-2009) Visitor, institute of Transportation, Hasselt University (February – June 2008) Vice-Head of the Department of Statistics, AUEB, 2016- President of Eastern Mediterranean Region of International Biometrics Society (2017- 2019) Director of the Laboratory of Bayesian and Computational Staistics, AUEB (2017 -)
Thesis Supervision	 Editorships Associate Editor for Metron journal (2007-) Associate Editor for Communications in Statistics (2008 -) Associate Editor for IMA Journal of Mathematics in Management (2009 -) Associate Editor for Stochastic Environmental Research and Risk Assessment (2012-2018) Editor of Biometrics Bulletin (2013-2015)
Thesis Supervision	 4 completed PhD 5 ongoing PhD 40 Msc Thesis (MSc in Statistics, AUEB MSc in Data Science, AUEB, MSc in Business Analytics, AUEB, MSc in Biostatistics, NKUA, MSc in Data Science, GSE, Barcelona)

Thesis