CURRICULUM – Paolo Vidoni

General information

Present position
Professor of Statistics at the Department of Economics and Statistics of the University of Udine, Italy.

Education
- Degree in Statistics and Actuarial Sciences, University of Trieste, Italy (March 21, 1991).
- PhD in Statistics, University of Padova, Italy (October 23, 1995), PhD thesis titled "Model selection: a predictive approach" (supervisor: Professor Giancarlo Diana).

Academic positions
- Researcher in Probability and Mathematical Statistics at the Faculty of Mathematics, Physics and Natural Sciences of the University of Udine (1995-2000).
- Associate professor of Statistics at the same Faculty (2000-2006).
- Head of the Department of Statistics of the University of Udine (2007-2010).
- Professor of Statistics at the Department of Economics and Statistics of the University of Udine (2006-present).
- Deputy Head of the Department of Economics and Statistics of the University of Udine (2018-2020)
- Coordinator of Departmental Research (2016-2022)
- Member of the board of directors of the University of Udine (2020-present)

Teaching activity

Courses
- Courses of Probability and Mathematical Statistics, Probability, Applied Statistics, Statistics, Biostatistics and Geostatistics at the Department of Mathematics, Computer Science and Physics and at the Department of Medicine of the University of Udine.

Advanced teaching
- Research seminars for the PhD program at the University of Roma "La Sapienza" in 2002.
- Academic board of the PhD program in Mathematics and Physics of the University of Udine (2001-2011).
- Referee for a PhD Thesis at La Trobe University, Victoria, Australia in 2008.
- Academic board of the PhD program in Managerial and Actuarial Sciences of the University of Udine and Trieste (2013-2017).

Research activity

Research interests
- Model selection.
- Predictive densities and prediction limits.
- State-space models and stochastic filtering in discrete time.
- Likelihood- and composite likelihood-based inference.
- Non-linear time series.
- Statistical learning
- Quantitative analysis in sports

Refereeing and editorial activity
- Associate editor of the journal "Statistical Methods and Applications" (2008-2011).
- Refereeing activity for "Biometrika", "Bernoulli", "Computational Statistics and Data Analysis", "Scandinavian Journal of Statistics", "The Annals of the Institute of Statistical Mathematics", "Statistical Methods and Applications", "Statistica Applicata", "Journal of the Royal Statistical Society ser. B", "Journal of Time Series Analysis", "Journal of Agricultural, Biological and Environmental Statistics", "Statistic and Probability Letters" and "Metron".

Research visits
- Visiting researcher at the Department of Theoretical Statistics, University of Aarhus, Denmark (April-May 1995, June 1996, May 1997), invited by prof. O.E. Barndorff-Nielsen.

Research grants
- Involved in various research programs supported by CNR, MIUR and UE.
- Local coordinator of the research unit of Udine in the research program "Model construction and selection" (Principal investigator: professor Walter Racugno) PRIN 2001.
- Supervisor, in the PRIN 2001 research program, of the research grant "Model selection: theoretical and computational aspects" (dr. Cristiano Varin).
- Local coordinator of the research unit of Udine in the research program "Parametric and non-parametric inference and prediction for time series" (Principal investigator: professor Estela Bee Dagum) PRIN 2004.
- Principal investigator of the research program "New likelihood-based inferential methods for complex statistical models" PRIN 2006.
- Principal investigator of the research program "Approximate likelihood methods for high-dimensional dependencies" PRIN 2008.
- Local coordinator of the research unit of Udine of the research program "Likelihood-free methods of inference" (Principal investigator: professor Brunero Liseo) PRIN 2015.

Workshop organization
- Organizing committee of the conference "Verso i censimenti del 2000", Udine, 7-9 June 1999.
- Organization of the session titled "Likelihood-based inference for complex statistical models" in the workshop "Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction" (S.Co.2007), Venice, 6-8 September 2007.
- Organization of the intermediate workshop of the research program "New likelihood-based inferential methods for complex statistical models", Udine, 9-10 June 2008.
- Organization of the final workshop of the research program "Approximate likelihood methods for high-dimensional dependencies", Venezia, 8-9 October 2012.
- Organization of the intermediate workshop of the research program "Likelihood-free methods of inference", Udine, 8 January 2020.

Invited talks at international conferences
- Conference on *Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction (S.Co.2009),* Milano, Italy, September 2009.
- Conference on *Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction* (S.Co.2011), Padova, Italy, September 2011.
- BIRS workshop on *Composite likelihood methods,* Banff, Canada, April 2012.
- *9th International Conference of the ERCIM WG on Computational and Methodological Statistics* (CMStatistics 2016), Seville, Spain, December 2016.

Publications

Papers published in international journals

Vidoni, P. (1995). A simple predictive density based on the *p** formula. *Biometrika* **82**, 855-863.

Vidoni, P. (1998). A note on modified estimative prediction limits and distributions. *Biometrika* **85**, 949-953.

Ferrante, M. and Vidoni, P. (1998). Finite dimensional filters for nonlinear stochastic difference equations with multiplicative noise. *Stochastic Processes and their Applications* **77**, 69-81.

Ferrante, M. and Vidoni, P. (1999). A Gaussian-generalized inverse Gaussian finite dimensional filter. *Stochastic Processes and their Applications* **84**, 165-176.

Vidoni, P. (1999). Exponential family state space models based on a conjugate latent process. *Journal of the Royal Statistical Society Ser. B* **61**, 213-221.

Vidoni, P. (1999). On predictive densities and prediction limits for scale and location models. *Journal of the Italian Statistical Society* **8**/2-3, 205-211.

Vidoni, P. (2000). Model selection using the estimative and the approximate *p** predictive densities. *Annals of the Institute of Statistical Mathematics* **52**, 57-70.

Vidoni, P. (2001). Proper dispersion state space models for stochastic volatility. *Scandinavian Journal of Statistics* **28**, 271-281.

Vidoni, P. (2001). Improved prediction limits for continuous and discrete observations in generalized linear models. *Biometrika* **88**, 881-887.

Ferrante, M., Fonseca, G. and Vidoni, P. (2003). Geometric ergodicity, regularity of the invariant distribution and inference for a threshold bilinear Markov process. *Statistica Sinica* **13**, 367-384.

Vidoni, P. (2003). Prediction and calibration in generalized linear models. *Annals of the Institute of Statistical Mathematics* **55**, 169-185.

Vidoni, P. (2004) Constructing non-linear Gaussian time series by means of a simplified state space representation. *Studies in Nonlinear Dynamics and Econometrics* **8** (2) art.9 (http://www.bepress.com/snde/vol8/iss2/art9/).

Vidoni, P. (2004). Improved prediction intervals for stochastic process models. *Journal of Time Series Analysis* **25**, 137-154.

Varin, C. and Vidoni, P. (2005). A note on composite likelihood inference and model selection. *Biometrika* **92**, 519-528.

Vidoni, P. (2006). Response prediction in mixed effects models. *Journal of Statistical Planning and Inference* **136**, 3948-3966.

Varin, C. and Vidoni, P. (2006). Pairwise likelihood inference for ordinal categorical time series. *Computational Statistics and Data Analysis* **51**, 2365-2373.

Vidoni, P. (2008). Improved predictive model selection. *Journal of Statistical Planning and Inference* **138**, 3713-3721.

Varin, C. and Vidoni, P. (2009). Pairwise likelihood inference for general state space models *Econometric Reviews* **28**, 170-185.

Vidoni, P. (2009). Improved prediction intervals and distribution functions. *Scandinavian Journal of Statistics* **36**, 735-748.

Vidoni, P. (2009). A simple procedure for computing improved prediction intervals for autoregressive models. *Journal of Time Series Analysis* **30**, 577-590.

Giummolè, F. and Vidoni, P. (2010). Improved prediction limits for a general class of Gaussian models. *Journal of Time Series Analysis* **31**, 483-493.

Fonseca G., Giummolè F. and Vidoni P. (2012). A note about calibrated prediction regions and distributions. *Journal of Statistical Planning and Inference* **142**, 2726-2734.

Fonseca G., Giummolè F. and Vidoni P. (2014). Calibrating predictive distributions. *Journal of Statistical Computation and Simulation* **84**, 373-383.

Vidoni, P. (2015). Calibrated multivariate distributions for improved conditional prediction. *Journal of Multivariate Analysis* **142**, 16-25.

Vidoni, P. (2015). Estimating the Kullback-Liebler risk based on multifold cross-validation. *Statistica Neerlandica* **69**, 510-540.

Vidoni, P. (2017). Improved multivariate prediction regions for Markov process models. *Statistical Methods & Applications* **26**, 1-18.

Franceschet, M., Bozzo, E. and Vidoni, P. (2017). The temporalized Massey's method. *Journal of Quantitative Analysis in Sports* **13**, 37-48.

Vidoni, P. (2018). A note on predictive densities based on composite likelihood methods. *Metron* 76, 31-48.

Lagazio, C. and Vidoni, P. (2018). Calibrated prediction regions for Gaussian random fields. *Environmetrics* **29**, e2495, doi 10.1002/env.2495.

Lancia, G. and Vidoni, P. (2020). Finding the largest triangle in a graph in expected quadratic time. *European Journal of Operational Research* **286**, 458-467.

Bozzo, E., Franceschet, M. and Vidoni, P. (2020). A parametric family of Massey-type methods: inference, prediction, and sensitivity. *Journal of Quantitative Analysis in Spo*rts **16**, 255-269.

Grassetti, L., Bellio, R., Di Gaspero, L., Fonseca, G., and Vidoni, P. (2020). An extended regularized adjusted plus-minus analysis for lineup management in basketball using play-by-play data. *IMA Journal of Management Mathematics* **32**, 385-409.

Vidoni, P. (2021). Boosting multiplicative model combination. *Scandinavian Journal of Statistics* **48**, 761-789.

Fonseca, G., Giummolè, F. and Vidoni, P. (2021). A note on simultaneous calibrated prediction intervals for time series. *Statistical Methods & Applications* **30**, 317–330.

Battauz, M. and Vidoni, P. (2022). A likelihood-based boosting algorithm for factor analysis models with binary data. *Computational Statistics and Data Analysis* **168**, 107412.

Lambardi di San Miniato, M., Bellio, R., Grassetti L. and Vidoni, P. (2022). Separable spatio-temporal kriging for fast virtual sensing. *Applied Stochastic Models in Business and Industry* 1-24.

International conference proceedings

Vidoni, P. (1999). Prediction intervals for generalized linear models. *Proceedings of the 14th International Workshop on Statistical Modelling* (Eds. H. Friedl, A. Berghold & G. Kauermann), Graz, July 1999, 703-706.

Fonseca, G. and Vidoni, P. (2001). Improved prediction limits for a simple threshold bilinear model. *Proceedings of the 16th International Workshop on Statistical Modelling* (Eds. B. Klein & L. Korsholm), Odense, July 2001, 445-448.

Vidoni, P. (2004). Improved redictive model selection criteria for logistic regression. *Proceedings of the 19th International Workshop on Statistical Modelling* (Eds. A. Biggeri, E. Dreassi, C. Lagazio & M. Marchi), Firenze, July 2004, 499-503.

Vidoni, P. (2010). Predictive densities and prediction limits based on predictive likelihoods. In *Complex Data Modeling and Computationally Intensive Statistical Methods* (Eds P. Mantovan, P. Secchi), Springer, 123-136.

Fonseca, G., Giummolè, F. and Vidoni, P. (2010). Improving estimative prediction regions. *Proceedings of the 25th International Workshop on Statistical Modelling* (Ed A. W. Bowman), Glasgow, July 2010, 201-204.

Fonseca, G., Giummolè, F. and Vidoni, P. (2011). Predictive distributions for non-regular parametric models. *Proceedings of the 26th International Workshop on Statistical Modelling* (Eds. Conesa D., Forte A., Lopez-Quilez A., Munoz F.), Valencia, July 2011, 220-223.

Fonseca, G., Giummolè, F. and Vidoni, P. (2011). Prediction in a multidimensional setting. *Cladag*, Pavia, September 2011. *Electronic Proceedings*.

Fonseca, G., Giummolè, F. and Vidoni, P. (2011). Bootstrap calibrated predictive distributions for time series. In: *Electronic proceedings of the 7th Conference on Statistical Computation and Complex Systems* (S.Co.2011), Padova, September 2011.

Bellio, R. and Vidoni, P. (2013). A note on improved random effects prediction in GLMMs. *Proceedings of the 28th International Workshop on Statistical Modelling* (Eds. Muggeo V.R., Capursi V., Boscaino G., Lovison G.), Palermo, July 2013, 507-510.

Vidoni, P. (2013). Prediction based on composite likelihood. *Electronic proceedings of the Conference SCo 2013*, Milano, September 2013.

Casella, C. and Vidoni, P. (2017). Formula 1 lap time modeling using generalized additive models. *Proceedings of MathSport International 2017 Conference* (Eds. De Francesco C., De Giovanni L., Ferrante M., Fonseca G., Lisi F., Pontarollo S.), Padova University Press, 87-96.

Vidoni, P. (2018). Inference for multiplicative model combination using score matching. *Proceedings of the 33rd International Workshop on Statistical Modelling* Vol. 2, University of Bristol (UK), July 2018, 192-198.

Grassetti, L., Bellio, R., Fonseca, G., and Vidoni, P. (2019). Play-by-play data analysis for team managing in basketball. *Proceedings of MathSport International 2020 Conference* (Eds. Karlis, D., Ntzoufras, I., Drikos, S.), Propobos Publications, Athens, 129-139.

Battauz, M. and Vidoni, P. (2021). Boosting Multidimensional IRT Models. CLADAG 2021: Book of Abstracts and Short Papers, Firenze, September 2021.

Lambardi di San Miniato, M., Bellio, R., Grassetti L. and Vidoni, P. (2022). Robust regression and adaptive filtering. *Proceedings of the 36rd International Workshop on Statistical Modelling*, University of Trieste (IT), July 2022, 211-216.

Battauz, M. and Vidoni, P. (2022). Boosting for variance components in mixed models. *Proceedings of the 36rd International Workshop on Statistical Modelling*, University of Trieste (IT), July 2022, 390-393.

National conference proceedings

Vidoni, P. (1998). Funzioni di densità predittive e limiti di previsione per modelli di scala e posizione. *Atti della XXXIX Riunione Scientifica della Società Italiana di Statistica*, 327-333, Sorrento, 14-17 aprile 1998.

Vidoni, P. (2000). Nuovi modelli per la varianza stocastica basati su famiglie di dispersione proprie. *Presentato alla XL Riunione Scientifica della Società Italiana di Statistica*, Firenze, 26-28 aprile 2000.

Vidoni, P. (2001). Improved prediction intervals for stochastic process models. *Atti del Convegno su Modelli Complessi e Metodi Computazionali Intensivi per la Stima e la Previsione*, Bressanone, 24-26 settembre 2001, 481-485.

Fonseca, G., Giummolè, F. and Vidoni, P. (2018). Simultaneous calibrated prediction intervals for time series. *Book of short Papers SIS 2018.* Editors: A. Abbruzzo, E. Brentari, M. Chiodi and D. Piacentino, 1207-1212, Pearson.

Vidoni, P. (2018). Improved bootstrap simultaneous prediction limits. *Book of short Papers SIS 2018.* Editors: A. Abbruzzo, E. Brentari, M. Chiodi and D. Piacentino, 892-897, Pearson.

Grassetti, L., Bellio, R., Fonseca, G., and Vidoni, P. (2019). Estimation of lineup efficiency effects in Basketball using play-by-play data. *Smart Statistics for Smart Applications. Book of short Papers SIS 2019.* Editors: G. Arbia, S. Peluso, A. Pini and G. Rivellini, 363-370, Pearson.

Lambardi di San Miniato, M., Bellio, R., Grassetti L. and Vidoni, P. (2022). Adaptive filters for time-varying correlation parameters. *Book of short Papers SIS 2022*. Editors: A. Balzanella, M. Bini, C. Cavicchia and R. Verde, 1400-1405, Pearson.

Mameli, V. and Vidoni, P. (2022). Prediction intervals based on multiplicative model combinations. *Book of short Papers SIS 2022*. Editors: A. Balzanella, M. Bini, C. Cavicchia and R. Verde, 1871-1876, Pearson.

Udine, 12 September 2022