

## Current Position

Full Professor

## Education and Past Positions

- July 1991 - today: working at the University of Trieste, ex-Faculty of Economics, Department of Applied Mathematics 'B. de Finetti' (until 31 December 2009), Department D.E.A.M.S. 'B. de Finetti' (since 1 January 2010).
- May 1987 - July 1991: worked as employee with the insurance company Lloyd Adriatico s.p.a. (later incorporated into Allianz Group SE), Research Office.
- 1986: I graduated in Economics at the University of Trieste, mark: 110/110 and honours.

## Teaching

I held courses:

- at undergraduate and graduate levels, and with SSISS (Scuola di specializzazione per l'insegnamento nella scuola secondaria), at the University of Trieste;
- at PhD level, at the University of Brescia.

The courses I held mainly belong to the areas of: Calculus, Linear Algebra, Probability Theory and Statistics, Mathematics of Finance. Among them (in Italian), Matematica per le scienze sociali, Matematica finanziaria II, Istituzioni di analisi matematica, Matematica per l'economia e la statistica 1, Matematica per l'economia, Calcolo delle probabilità, Elementi di calcolo delle probabilità, Calcolo delle probabilità e statistica, Metodi matematici per l'economia, Teorie non standard dell'incertezza.

- Co-author of the textbook: A. Sgarro, L. Franzoi, P. Vicig (2023). Statistica di base – idee e tecniche, ed. Zanichelli.

## Research

Most of my recent research activity focused on uncertainty modelling, in particular within the theory of imprecise probabilities and their applications, and of related models, including belief functions, coherent lower/upper previsions, risk measures, and others. Among my current and past scientific activities:

- Member of the Editorial Board, as Associate Editor, of: The International Journal of Approximate Reasoning (July 2018 - present).
- External evaluator (Remote referee) of research projects for FWO - The Research Foundation Flanders, Belgium, and University of Leuven, Belgium.
- Academic Referee for a position of Assistant Professor in Statistics (January 2018), and a position of Professor, band 1 (March 2019), Durham University (UK).
- Member of the Selection Committee for the IJAR Young Researcher Award at the international conferences: ISIPTA'17 and ISIPTA2023.

I have been active in scientific peer reviewing, as follows:

- pre-publication refereeing of journal papers, for the following international journals: Artificial Intelligence; Decisions in Economics and Finance; Fuzzy Sets and Systems; Information Sciences; International Journal of Approximate Reasoning, International Journal of Uncertainty, Fuzziness and Knowledge-based Systems; Journal of Mathematical Analysis and Applications; Journal of Mathematical Psychology; Journal of Statistical Planning and Inference; Journal of Statistical Theory and Practice; Kybernetika; Theory and Decision.
- pre-publication refereeing of papers submitted to the following international conferences: IPMU2010, IPMU2014 (IPMU - Information Processing and Management of Uncertainty in Knowledge-based Systems) ISIPTA'01, ISIPTA'03, ISIPTA'05, ISIPTA'07, ISIPTA'09, ISIPTA'11, ISIPTA'13, ISIPTA'15, ISIPTA'17, ISIPTA2019, ISIPTA2021, ISIPTA2023 (ISIPTA - International Symposium on Imprecise Probability: Theories and Applications) SMPS 2006, SMPS 2016 (SMPS - Soft Methods in Probability and Statistics), BELIEF 2016, SMPS/BELIEF 2018.
- pre-publication evaluation of book proposals.
- post-publication reviews, as a reviewer of AMS - American Mathematical Society, Mathematical Reviews, MathSciNet (2005 - present).

- The refereed international conferences I presented papers at include: the ISIPTA'99, '01, '03, '05, '07, '09, '11, '13, '15, '17, 2019, 2021, 2023 conferences, ECSQARU '01, '17, SMPS2012, 2016, IPMU1996, 1998, 2000, 2002, 2006, 2010, 2020, 2024, and other ones.
- I have been Member of the Program Committees of the following international conferences: ISIPTA'01, '03, '05, '07, '09, '11, '13, '15, '17, 2019, 2021, 2023, IPMU2010, IPMU2014, BELIEF2016, SMPS/BELIEF2018.
- Award(s):  
Certificate of Excellence in Reviewing, International Journal of Approximate Reasoning, issued by: Elsevier, Amsterdam, July 2013;  
Certificate of Outstanding Contribution in Reviewing, issued by: the Editors of International Journal of Approximate Reasoning, Elsevier, Amsterdam, July 2015
- Scientific Memberships:
  - Member of the SIPTA Society (The Society for Imprecise Probability: Theories and Applications, [www.sipta.org](http://www.sipta.org))
  - Member of the 2<sup>nd</sup> and 3<sup>rd</sup> SIPTA Executive Committee (1 November 2006 to 24 July 2011).
  - I have been member of several national and regional research programmes, and principal investigator of an Indam – Gnampa (national) research project and of local research programmes.

### **A Selection of My Publications** (last updated 18 Sept. 2024)

- R. Pelessoni, P. Vicig (2024). Probability Inequalities with Imprecise Previsions. In: Information Processing and Management of Uncertainty in Knowledge-Based Systems – IPMU 2024, Springer International Publishing, in press.
- E. Miranda, R. Pelessoni, P. Vicig (2024). Evaluating uncertainty with Vertical Barrier Models, *International Journal of Approximate Reasoning*, 167, 109132, ISSN: 0888-613X, DOI: 10.1016/j.ijar.2024.109132.
- E. Miranda, R. Pelessoni, P. Vicig (2023). Vertical Barrier Models as Unified Distortions. In: Proceedings of Machine Learning Research, 215, pp. 333-343, ISSN: 2640-3498, International Symposium on Imprecise Probabilities: Theories and Applications, 11-14 July 2023, Oviedo, Spain, Enrique Miranda, Ignacio Montes, Erik Quaeghebeur, Barbara Vantaggi (Eds.).
- R. Pelessoni, P. Vicig (2023). Jensen's and Cantelli's inequalities with imprecise previsions, *Fuzzy Sets and Systems* 458, 50-68.
- R. Pelessoni, P. Vicig (2022). Dilation properties of coherent Nearly-Linear models. *International Journal of Approximate Reasoning* 140, 211-231.
- E. Miranda, I. Montes, P. Vicig (2021). On the selection of an optimal outer approximation of a coherent lower probability. *Fuzzy Sets and Systems* 424, 1-36.
- R. Pelessoni, P. Vicig, C. Corsato (2020). Inference with Nearly-Linear uncertainty models. *Fuzzy Sets and Systems* 412, 1-26.
- E. Miranda, I. Montes, P. Vicig (2020). On the elicitation of an optimal outer approximation of a coherent lower probability. *Communications in Computer and Information Science*, 1238 CCIS, pp. 67–81.
- R. Pelessoni, P. Vicig (2020). Conditioning and dilation with coherent nearly-linear models. *Communications in Computer and Information Science*, 1238 CCIS, pp. 137–150.
- I. Montes, E. Miranda, P. Vicig (2019). Outer approximating coherent lower probabilities with belief functions. *International Journal of Approximate Reasoning* 110, 1-30.
- R. Pelessoni, P. Vicig, C. Corsato (2019). Extending Nearly-Linear Models. *PMLR: Proceedings of Machine Learning Research* 103, 82-90.
- C. Corsato, R. Pelessoni, P. Vicig (2019). Nearly-Linear uncertainty measures. *International Journal of Approximate Reasoning* 114, 1-28.

- C. Corsato, R. Pelessoni, P. Vicig (2019). Generalising the Pari-Mutuel Model. In: *Uncertainty Modelling in Data Science* (S. Destercke et al., eds.) pp. 216-223. Springer, Cham.
- I. Montes, E. Miranda, P. Vicig (2018). 2-Monotone Outer Approximations of Coherent Lower Probabilities. *International Journal of Approximate Reasoning* 101, 181-205.
- M. Thimm, P. Baroni, M. Giacomini, P. Vicig P. (2018). Probabilities on Extensions in Abstract Argumentation. In: E. Black, S. Modgil, N. Oren (eds), *Theory and Applications of Formal Argumentation*. LNCS 10757, pp. 102-119. Springer, Cham.
- I. Montes, E. Miranda, P. Vicig (2018). Approximations of coherent lower probabilities by 2-monotone capacities. In: J. Medina et al. (eds.), *Information Processing and Management of Uncertainty in Knowledge-Based Systems. Theory and Foundations*, pp. 214-225. Springer Int. Publishing.
- C. Corsato, R. Pelessoni, P. Vicig (2017). Weak Dutch Books with imprecise previsions. *International Journal of Approximate Reasoning* 88, 72-90.
- R. Pelessoni, P. Vicig (2017). A Sandwich Theorem for Natural Extensions. In: *Soft Methods for Data Science* (M. B. Ferraro et al., eds), pp. 391-398, Springer International Publishing Switzerland.
- R. Pelessoni, P. Vicig (2016). 2-Coherent and 2-convex conditional lower previsions. *International Journal of Approximate Reasoning* 77, 66-86.
- R. Pelessoni, P. Vicig, I. Montes, E. Miranda (2016). Bivariate p-boxes. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems* 24 (2).
- P. Vicig (2016). A Note on the Equivalence of Coherence and Constrained Coherence. *Minds and Machines* 26, 303-305.
- I. Montes, E. Miranda, R. Pelessoni, P. Vicig (2015). Sklar's Theorem in an Imprecise Setting. *Fuzzy Sets and Systems* 278C, 48-66.
- R. Pelessoni, P. Vicig (2015). Weak consistency for imprecise conditional probabilities. ISIPTA'15 - Proceedings of the 9th International Symposium on Imprecise Probability: Theories and Applications, 237-246.
- R. Pelessoni, P. Vicig (2014). The Goodman-Nguyen Relation within Imprecise Probability Theory. *International Journal of Approximate Reasoning* 55, 1694-1707.
- P. Vicig (2014). Financial Risk Measurement. Chapter 12, pp.279-290, in: *Introduction to Imprecise Probabilities*, T. Augustin, F. P. A. Coolen, G. de Cooman, M. C. M. Troffaes eds., John Wiley & Sons.
- P. Baroni, M. Giacomini, P. Vicig (2014). On rationality conditions for epistemic probabilities in abstract argumentation. In: *Computational Models of Argument* (S. Parsons et al., eds.), IOS Press. doi:10.3233/978-1-61499-436-7-121, ISBN print 978-1-61499-435-0 ISBN online 978-1-61499-436-7.
- R. Pelessoni, P. Vicig, I. Montes, E. Miranda (2013). Imprecise copulas and bivariate stochastic orders. Proceedings of EUROFUSE'2013 (B. de Baets, J. Fodor, S. Montes, eds.), pp. 217--224. Edited by the University of Oviedo. ISBN: 978-84-16046-04-1R.
- R. Pelessoni, P. Vicig (2013). The Goodman-Nguyen Relation in Uncertainty Measurement. In: *Synergies of Soft Computing and Statistics for Intelligent Data Analysis* (R. Kruse et al. eds.). *Advances in Intelligent Systems and Computing*, vol. 190, pp. 37-44. Springer, Heidelberg, ISBN: 978-3-642.33042-1.
- P. Vicig, T. Seidenfeld (2012). Bruno de Finetti and imprecision: Imprecise probability does not exist!. *International Journal of Approximate Reasoning*, vol. 53, p. 1115-1123, ISSN: 0888-613X, doi: 10.1016/j.ijar.2012.06.021
- R. Pelessoni, P. Vicig (2012). The Goodman-Nguyen Relation in Uncertainty Measurement. In: *Synergies of Soft Computing and Statistics for Intelligent Data Analysis*. vol. 190, p. 37-44, Heidelberg: Springer, ISBN: 9783642330414, doi: 10.1007/978-3-642-33042-1\_5

- R. Pelessoni, P. Vicig, M. Zaffalon (2010). Inference and risk measurement with the pari-mutuel model. *International Journal of Approximate Reasoning*, vol. 51 (9); p. 1145-1158, ISSN: 0888-613X
- P. Vicig (2010). A Gambler's Gain Prospects with Coherent Imprecise Previsions. In: Hüllermeier, E., Kruse, R., Hoffmann, F.. *Information Processing and Management of Uncertainty in Knowledge-Based Systems*. p. 50-59, Heidelberg: Springer, ISBN/ISSN: 978-3-642-14054-9
- P. Baroni, R. Pelessoni, P. Vicig (2009). Generalizing Dutch risk measures through imprecise previsions, *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems* 17 (2), pp. 153-177.
- R. Pelessoni, P. Vicig (2009). Williams coherence and beyond, *International Journal of Approximate Reasoning* 50 (4), pp.612-626.
- R. Pelessoni, P. Vicig (2008). Bayes' Theorem Bounds for Convex Lower Previsions, *Journal of Statistical Theory and Practice* 3 (1), pp. 85-101.
- P. Vicig (2008), Financial Risk Measurement with Imprecise Probabilities, *International Journal of Approximate Reasoning* 49 (1), pp.159-174.
- P. Baroni, R. Pelessoni, P. Vicig (2007). Shortfall-dependant Risk Measures (and Previsions). In: Proceedings of the 5th EUSFLAT Conference, Ostrava, Czech Republic. (vol. 1, pp. 281-288). ISBN/ISSN: 978-80-7368-386-3. OSTRAVA: University of Ostrava.
- P. Vicig, M. Zaffalon, F.G. Cozman (2007), Notes on "Notes on Conditional Previsions", *International Journal of Approximate Reasoning* 44, pp. 358-365.
- P. Baroni, P. Vicig (2007). On computing the maximum-entropy probability consistent with a capacity, Proc. of IPMU 2006, Paris, Editions EDK pp. 1732-1739.
- P. Baroni, P. Vicig (2005). An uncertainty interchange format with imprecise probabilities, *International Journal of Approximate Reasoning* 40 (3), pp. 147-180, 2005
- R. Pelessoni, P. Vicig (2005). Envelope Theorems and Dilation with Convex Conditional Previsions. In: Proceedings of the 4th International Symposium on Imprecise Probabilities: Theories and Applications. ISIPTA05. Pittsburgh, PA, USA. (pp. 266-275). LUGANO: SIPTA (SWITZERLAND).
- R. Pelessoni, P. Vicig (2005). Uncertainty modelling and conditioning with convex imprecise previsions. *International Journal of Approximate Reasoning* 2-3, pp. 297-319
- P. Walley, R. Pelessoni, P. Vicig (2004). Direct Algorithms for Checking Consistency and Making Inferences from Conditional Probability Assessments. *Journal of Statistical Planning and Inference* 126(1), pp. 119-151 ISSN: 0378-3758.
- P. Vicig, L. Bortolussi (2004), Fuzzy Possibilities as Upper Previsions, *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems* 12 (5), pp. 559-574.
- R. Pelessoni, P. Vicig (2003). Imprecise Previsions for Risk Measurement. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems* 11 (4), pp. 393-412.
- R. Pelessoni, P. Vicig (2003). Convex Imprecise Previsions. *Reliable Computing* vol. 9 (6), pp. 465-485.
- P. Baroni, P. Vicig (2001). On the Conceptual Status of Belief Functions with respect to Coherent Lower Probabilities, Lecture Notes in Artificial Intelligence 2143 (S. Benferhat, P. Besnard eds.), pp. 328-339, Springer Verlag.
- R. Pelessoni, P. Vicig (2001). Coherent Risk Measures and Upper Previsions. In: Proceedings of the 2nd International Symposium on Imprecise Probabilities and Their Application. ISIPTA01. Ithaca, NY, USA. (pp. 307-315). ISBN/ISSN: 90-423-0130-9. MAASTRICHT: Shaker Publishing (NETHERLANDS).
- P. Vicig (2000). Epistemic Independence for Imprecise Probabilities, *International Journal of Approximate Reasoning* 24, pp. 235-250.

- R. Pelesoni, P. Vicig (1998). A Consistency Problem for Imprecise Conditional Probability Assessments. In: Proceedings of IPMU 1998. Paris, France. (vol. 2, pp. 1478-1485). ISBN/ISSN: 2-84254-013-1. SEVRES CEDEX: Editions Medicales et Scientifiques (FRANCE).
- P. Vicig (1995). Stratified Realization of Comparative Probabilities. *Rivista di matematica per le scienze economiche e sociali* 18 (2), pp. 245-260.