

# ***Catalina Stefanescu-Cuntze***

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## ***Current employment***

Professor of Management Science, January 2016–Present;

Faculty Lead of Master in Analytics and Artificial Intelligence, September 2022–Present;

ESMT Berlin, Berlin, Germany

## ***Education***

PhD in Operations Research, Cornell University, Ithaca, New York, USA, 2002.

MS in Operations Research, Cornell University, Ithaca, New York, USA, 2000.

BS in Mathematics, University of Bucharest, Bucharest, Romania, 1997.

## ***Past employment***

Deutsche Post DHL Chair, ESMT Berlin, Berlin, Germany, July 2013–December 2021.

Dean of Faculty, ESMT Berlin, Berlin, Germany, November 2012–July 2019.

Associate Professor of Management Science, ESMT Berlin, Berlin, Germany, November 2009–December 2015.

Director of Research, ESMT Berlin, Berlin, Germany, September 2010–October 2012.

Assistant Professor of Decision Sciences, London Business School, London, UK, 2002–2009.

### **Refereed journal publications**

Kocabiyyoglu, A., I. Popescu, and C. Stefanescu (2014). Pricing and revenue management: The value of coordination. *Management Science* 60(3):730–752.

Chava, S., C. Stefanescu, and S. Turnbull (2011). Modeling the loss distribution. *Management Science* 57(7): 1267–1287.

Stefanescu, C., and B. W. Turnbull (2009). Likelihood inference for exchangeable continuous data: Use of the Farlie–Gumbel–Morgenstern Model. *Statistical Methodology* 6(5): 503–512.

Stefanescu, C., R. Tunaru, and S. Turnbull (2009). The credit rating process and estimation of transition probabilities: A Bayesian approach. *Journal of Empirical Finance* 16(2): 216–234.

Stefanescu, C., and D. V. Mehrotra (2008). A more powerful average bioequivalence analysis for the 2x2 crossover. *Communications in Statistics – Simulation and Computation* 37(1): 212–221.

Stefanescu, C., and B. W. Turnbull (2006). Multivariate frailty models for exchangeable survival data. *Technometrics* 48(3): 411–417.

Berger V. W., C. Stefanescu, and Y. Y. Zhou (2006). The analysis of stratified 2x2 contingency tables. *Biometrical Journal* 48(6): 992–1007.

Stefanescu, C., and B. W. Turnbull (2005). On the multivariate probit model for exchangeable binary data with covariates. *Biometrical Journal* 47(2): 206–218.

Stefanescu, C., and B. W. Turnbull (2003). Likelihood inference for exchangeable binary data with varying cluster sizes. *Biometrics* 59(1): 18–24.

Ahrens, C., N. Altman, G. Casella, M. Eaton, T. J. G. Hwang, J. Staudenmayer, and C. Stefanescu (2001). Leukemia clusters and TCE waste sites in upstate New York: How adding covariates changes the story. *Environmetrics* 12(7): 659–672.

Stefanescu, C., C. Calude, and E. Calude (1998). Computational complementarity for mealy automata. *European Association for Theoretical Computer Science Bulletin* 66: 139–149.

Stefanescu, C. (1998). Simulation of a multitype Galton-Watson chain. *Simulation Practice and Theory* 6(7): 657–663.

Stefanescu, C. (1995). A Markov process of sequential allocation. *Journal of Universal Computer Science* 1(12): 821–827.

### **Book chapters**

Gallego, G., and C. Stefanescu (2012). Services engineering: Design and pricing of service features. In *The Oxford Handbook of Pricing Management*, ed. Ö. Özer and R. Phillips, 713–737. Oxford: Oxford University Press.

Stefanescu, C., V. W. Berger, and S. B. Hershberger (2005). Yates' correction. In *The encyclopedia of statistics in behavioral science*, ed. B. Everitt and D. Howell. Hoboken, N.J.: John Wiley & Sons.

Stefanescu, C., V. W. Berger, and S. B. Hershberger (2003). Yates' correction. In *The encyclopedia of statistics in behavioral science*, ed. B. Everitt and D. Howell. Hoboken, N.J.: John Wiley & Sons.

### **Other publications**

Stefanescu, C. (2011). Verkäufer im Methodenwirrwarr. *Manager Magazin*, November 14.

Stefanescu, C., V. DeMiguel, K. Fridgeirsdottir, and S. Zenios (2004). Revenue management with correlated demand forecasting. In the conference *Proceedings of the American Statistical Association, Business and Economics Statistics Section* in Alexandria, Virginia, USA.

Stefanescu, C. (2002). Statistical models and methods for clustered exchangeable binary and survival data. PhD thesis, Cornell University, Ithaca, New York, USA.

Stefanescu, C. (2001). *Modelling stochastic volatility in time series of stock returns: Empirical evidence*. Cornell University Technical Report TR OR-1318.

### **Selected teaching**

#### **ESMT Berlin**

*Customer Analytics*, Global Online MBA, ESMT Berlin, 2022.

*Data-driven Decisions*, Global Online MBA, ESMT Berlin, 2022.

*Regression*, MIM, ESMT Berlin, 2019–2022.

*Operations*, Executive MBA, ESMT Berlin, 2016–2022.

*Data Analysis and Forecasting*, Executive MBA, ESMT Berlin, 2017–2022.

*Analytics in Practice*, MBA, ESMT Berlin, 2020, 2022.

*Customer Analytics in the Digital Age*, part-time MBA, ESMT Berlin, 2021–2022.

*Data and Decisions*, part-time MBA, ESMT Berlin, 2021–2022.

*Data Analytics*, Exedutive Education Program, ESMT Berlin, 2021–2022.

*Analytics for Decision Makers*, Exedutive Education Program, ESMT Berlin, 2021–2022.

*Customer Analytics*, MBA, ESMT Berlin, 2020–2022.

*Data Analytics for Managers*, MBA, ESMT Berlin, 2020–2022.

*Data and Decisions*, MBA, ESMT Berlin, 2019, 2021.

*Predictive Analytics*, MIM, ESMT Berlin, 2019–2021.

*Operations and Supply Chain*, Executive MBA Doha program, ESMT Berlin, 2019.

*Innovation as a Corporate Model*, Exedutive Education Program, ESMT Berlin, 2019.

*Quantitative Methods*, MBA, ESMT Berlin, 2018, 2019.

*Advanced Analytics*, MIM, ESMT Berlin, 2017.

*Management Science II*, PhD, Berlin Doctoral Program in Economics and Management Science, ESMT Berlin, 2010/11, 2014, 2016.

### **External**

*Statistical research methods* London Business School, 2014.

*Business Statistics* Mediterranean School of Business, 2010, 2011, 2012.

*Business Statistics* London Business School/Columbia Business School, 2011.

*Business Statistics* Ecole des Ponts ParisTech, 2010.

*Business Statistics* London Business School, 2010.

### **Corporate teaching and consulting**

AIMS African Institute of Mathematical Sciences, Smart Pricer, Xerox, Allianz, Deutsche Telekom, HelloFresh, TUV Nord.

### **Research grants**

2022- Merck KGaA Research Grant at ESMT, Title: Scenario Modelling 2.0.

2021-2022 Merck KGaA Research Grant at ESMT, Title: GHG Scenario modelling and analysis.

2019-22 EY Digital Innovation Research Fund at ESMT, Title: Pricing and consumer behavior in data-driven business models, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.

2017-2019 Peter Curtius Foundation Grant at ESMT, Title: Data-driven business models in internet 4.0.

2010–11 *Peter Curtius Foundation Grant* at ESMT. Title: What Is in a Rating? Credit Rating Performance for Structured Financial Products.

2007–08 *Research and Materials Development Fund* at London Business School. Title: Upgrades, Upsells and Pricing in Revenue Management.

2005–06 *Research and Materials Development Fund* at London Business School. Title: The Credit Rating Process and Estimation of Transition Probabilities: A Bayesian Approach.

2004 Advanced Institute of Management Research. Title: Airline Revenue Management with Correlated Demand and Multistage Stochastic Programming.

2003–04 *Research and Materials Development Fund* at London Business School. Title: Modeling Expected Loss.

### **Honors and awards**

2022 FOME Learning Design Award (Bronze), FOME Alliance.

2022 *Best Teacher Award*, ESMT Berlin, Germany, EMBA Class 2020-22.

2021, 2020, 2019, 2018, 2017, 2016, 2012 *President's Honor Roll for Teaching Excellence*, ESMT Berlin, Germany, MBA and EMBA Classes.

2008 *Best Paper Award* at the 48th AGIFORS Annual Symposium in Montreal, Canada for the paper "Upgrades, Upsells and Pricing in Revenue Management."

2008 *Best Paper Award* at the AGIFORS Revenue Management Conference in Tahiti for the paper "Upgrades, Upsells and Pricing in Revenue Management."

2006 *Best Paper Award* of the INFORMS Financial Services Section at the INFORMS Annual Meeting in Pittsburgh, Pennsylvania, USA for the paper "The Credit Rating Process and Estimation of Transition Probabilities: A Bayesian Approach."

2005 *Best Paper Award*, Honorable Mention of the INFORMS Financial Services Section at the INFORMS Annual Meeting in San Francisco, California, USA for the paper "Modeling Expected Loss."

2002 *Best Paper Award*, second winner of the Biopharmaceutical Section at the 2002 Joint Statistical Meetings of the American Statistical Association for the paper "A More Powerful Average Bioequivalence Analysis for the 2x2 Crossover Design."

### **Referee**

Management Science; Operations Research; Production and Operations Management; Manufacturing and Service Operations Management; Journal of American Statistical Association; Biometrics; Biometrika; Transportation Science; Statistics in Medicine; Biometrical Journal; Applied Stochastic Models in Business and Industry; Journal of

Agricultural, Biological and Environmental Statistics; Journal of Multivariate Analysis; Journal of Credit Risk; Journal of Risk; Journal of Statistical Planning and Inference.

### ***Editorial services***

Journal of Revenue and Pricing Management.

### ***External reviewer***

Grant applications to ESRC and EPSRC.

### ***Affiliations and memberships***

Royal Statistical Society; American Statistical Association; Institute for Operations Research and Management Science; Institute of Mathematical Statistics.

### ***Boards***

Smart Pricer, Berlin, Germany.

Credit Sky, Bucharest, Romania.

### ***PhD supervision***

2022- Supervisor for Efe Baslar, Berlin School of Economics (BSE).

2011-2018 Supervisor for Jing Huang, Berlin Doctoral Program in Economics and Management Science (BDPEMS).

2007–08 PhD transfer committee for Jikyung Kim, London Business School.

2006–07 PhD transfer committee for Sirio Aramonte, London Business School.

2006–07 PhD transfer committee for Eva Ascarza, London Business School.

2006–07 PhD transfer committee for Dipeng Chen, London Business School.

2006–07 PhD transfer committee for Yang Fan, London Business School.

### ***Research interests***

My research focuses on the design, analysis, and application of statistical models and methods for managerial decision making. I have worked on three different areas: demand modeling and

forecasting for revenue management, statistical models for credit risk, and methodologies for correlated binary and survival data with biostatistical applications.

**Demand modeling and forecasting:**

Multivariate demand models for revenue management.

Estimation of demand models from censored sales data.

Optimal pricing for demand models with customer choice and capacity constraints.

**Statistical models for credit risk:**

Modeling and predicting loss distributions; default and recovery rate models.

Credit rating migration processes: modeling and estimation.

Methodologies for statistical inference in low default portfolios.

**Statistical methodologies for correlated data:**

Likelihood inference for correlated binary data.

Bayesian inference for correlated survival data with applications to reliability studies.

Statistical methodologies for the design and analysis of clinical trials.

### ***Biographical sketch***

Catalina Stefanescu-Cuntze is Professor of Management Science. She holds a BS degree in Mathematics from University of Bucharest, Romania, an MS degree in Operations Research from Cornell University, and a PhD in Operations Research from Cornell University.

Her research focuses on the design, analysis, and application of statistical models and methods for managerial decision making. Applications include demand modeling and forecasting for revenue management, statistical models for credit risk, and methodologies for correlated binary and survival data with biostatistical applications.

She teaches MBA and EMBA courses as well as Executive Education sessions on Data Analytics and Operations Management, and PhD seminars on introductory and advanced Statistical Research Methods.

### ***Languages***

Romanian (native); English and French (fluent), Spanish, German, Italian

*Updated: March 3, 2023*