# Gustavo J. Vulcano

School of Business
Universidad Torcuato Di Tella
Av. Figueroa Alcorta 7350, Suite 405
Buenos Aires, C1428BCW, Argentina

Phone: +54(11) 5169-7320
e-mail: gvulcano@utdt.edu

## Education

- *Ph.D., Decision, Risk and Operations*, Graduate School of Business, Columbia University, New York, NY. Thesis: "Auctions and Simulation-Based Optimization in Revenue Management", supervised by Prof. Garrett van Ryzin. (April 2003)

- *M.Phil., Decision, Risk and Operations*, Graduate School of Business, Columbia University, New York, NY. (October 2000)

- *Licenciado en Ciencias de la Computación (M.Sc. Computer Science),* School of Sciences, University of Buenos Aires, Argentina. (June 1997)

- *Analista Universitario de Computación (B.Sc. Computer Science),* School of Sciences, University of Buenos Aires, Argentina. (October 1994)

## Academic Appointments

- Academic Dean, School of Business, Universidad Torcuato Di Tella, Buenos Aires, Argentina. (2022-)

- Professor, School of Business, Universidad Torcuato Di Tella, Buenos Aires, Argentina. (2015-)

- Adjunct Professor, NYU Stern School of Business (2017-).

- Adjunct Professor, Graduate School of Business, Columbia University (2022-2024).

- Visiting Professor, Fuqua School of Business, Duke University (2019-2020).

- Chair of the Master in Management+Analytics, Universidad Torcuato Di Tella, Buenos Aires, Argentina (2017-2022).

- Independent researcher, CONICET, Argentina (2016-)

- Department of Information, Operations and Management Sciences, Leonard N. Stern School of Business, New York University, New York, NY. *Associate Professor* (2010-2017, tenured in 2012), *Assistant Professor* (2003-2010), *Instructor* (2002-2003).

- Columbia University, Graduate School of Business, New York, NY. *Teaching Assistant* (Sept. 1998 – December 2000)

- University of Buenos Aires, School of Sciences, Buenos Aires, Argentina. *Teaching Assistant* (1992 – 1998)

# Research Activity

## Interests

Revenue and pricing analytics. Currently, I am focusing on the following research streams:

- Customer choice and behavioral models
- Data driven methods for pricing and revenue management
- Computational methods for network revenue management

## Published and Accepted Papers

1. J. Correa, D. Pizarro and G. Vulcano. The value of observing the buyers' arrival time in dynamic pricing. *Management Science* Vol.70(4):2107-2121, 2024.
2. S. Jagabathula, D. Mitrofanov, and G. Vulcano. Demand Estimation under Uncertain Consideration Sets. *Operations Research* Vol.72(1):19-42, 2024.
3. S. Jagabathula, D. Mitrofanov and G. Vulcano. Personalized retail promotions through a DAG-based representation of customer preferences. *Operations Research* Vol. 70(2):641-665, 2022.
4. G. Berbeglia, A. Garassino and G. Vulcano. A comparative empirical study of discrete choice models in retail operations. *Management Science* Vol. 68(6): 4005-4023, 2022.
5. F. Previgliano and G. Vulcano. Managing uncertain capacities for network revenue optimization. *M&SOM* Vol. 24(2):1202-1219, 2022.
6. T. Abdallah and G. Vulcano. Demand estimation under the multinomial logit model from sales transaction data. *M&SOM* Vol. 23(5): 1196-1216, 2020.
7. I. Mendez-Diaz, G. Vulcano, and P. Zabala. Analysis of a generalized linear ordering problem via integer programming. *Discrete Applied Mathematics* Vol. 271, pp. 93–107, 2019.
8. S. Jagabathula and G. Vulcano. A partial-order based model to estimate individual preferences using panel data. *Management Science* Vol. 64(4):1609-1628, 2018. Featured article in the Management Science review blog in April 2018.
9. N. Surasvadi, C. Tang and G. Vulcano. Using contingent markdowns with reservation to profit from strategic consumer behavior. *Production and Operations Management*, published online, September 2017.
10. G. van Ryzin and G. Vulcano. An expectation-maximization method to estimate a rank-based choice model of demand. Technical note. *Operations Research* Vol. 65(2), 396-407, 2017.
11. I. Lobel, J, Patel, G. Vulcano and J. Zhang. Optimizing product launches in the presence of strategic consumers. *Management Science* Vol. 62(6): 1778-1799, 2016.
12. G. van Ryzin and G. Vulcano. A market discovery algorithm to estimate a general class of non-parametric choice models. *Management Science* Vol. 61(2): 281-300, 2015.
13. I. Mendez-Díaz, J. Miranda Bront, G. Vulcano and P. Zabala. A branch-and-cut algorithm for the latent-class logit assortment problem. *Discrete Applied Mathematics* Vol. 164: 246-263, 2014.
14. X. Hu, R. Caldentey and G. Vulcano. Revenue sharing in airline alliances. *Management Science*, 59(5): 1177-1195, 2013.
15. G. Vulcano, G.J. van Ryzin and R. Ratliff. Estimating Primary Demand for Substitutable

Products from Sales Transaction Data. *Operations Research* Vol. 60(2): 313-334, 2012.

16. J. Chaneton and G. Vulcano. Computing bid-prices for revenue management under customer choice behavior. *M&SOM* Vol. 13(4): 452-470, 2011.

17. N. Osadchiy and G. Vulcano. Selling with binding reservations in the presence of strategic consumers. *Management Science,* Vol. 56(12): 2173-2190, 2010.

18. G. Vulcano, G.J. van Ryzin, and W. Chaar. Choice-based revenue management: An empirical study of estimation and optimization. *M&SOM* Vol. 12(3): 371-392, 2010.

19. J. Miranda Bront, I. Méndez-Diaz, and G. Vulcano. A column generation algorithm for choice-based network revenue management. *Operations Research* Vol. 57(3): 769-784, 2009.

20. Y. Chen and G. Vulcano. Effects of information disclosure under first- and second-price auctions in a supply chain setting. *M&SOM,* Vol.11(2): 299-316, 2009.

21. G. J. van Ryzin and G. Vulcano. Computing virtual nesting controls for network Revenue Management under customer choice behavior. *M&SOM,* Vol. 10(3): 448-467, 2008.

22. G. J. van Ryzin and G. Vulcano. Simulation-based optimization of virtual nesting controls for network Revenue Management. *Operations Research*, Vol. 56(4): 865-880, 2008.

23. R. Caldentey and G. Vulcano, Online auction and list price Revenue Management. *Management Science*, 53(5): 795-813, 2007.

24. G. J. van Ryzin and G. Vulcano. Optimal auctioning and ordering in an infinite horizon inventory-pricing system. *Operations Research*, 52(3): 346-367, 2004.

25. G. Vulcano, G.J. van Ryzin and C. Maglaras. Optimal dynamic auctions for Revenue Management. *Management Science,* 48(11): 1388-1407, 2002. Extended abstract in *M&SOM* 4(1): 7-11, 2002.

26. G. Vulcano, D. Moses, M. de las Heras and A. Valcarcel. A lineal equation for the classification of progressive and hyperactive spermatozoa. *Mathematical Biosciences*, 149(1): 77-93, 1998.

## Working Papers

1. S. Jagabathula and G. Vulcano (2024). The Mallows model of discrete choice in operational contexts.

## Book chapter

1. Y. Chen, C. Maglaras and G. Vulcano. Design of an aggregated marketplace under congestion effects: Asymptotic analysis and equilibrium characterization. In Sharing Economy: Making Supply Meet Demand, M. Hu (Ed.), Chapter 11, pp. 217-248, Springer Series in Supply Chain Management, C. Tang (Series Ed.), 2018.

**2.** Y. Aviv and G. Vulcano (2011). Dynamic list pricing. Chapter 23 in Handbook of Pricing Management, Eds. O. Ozer and R. Phillips, Oxford University Press, pp. 522-584, 2012.

**Other articles**

1. K. Talluri, G. van Ryzin, I. Karaesmen and G. Vulcano. Revenue Management: Models and methods. Proceedings of the 2009 Winter Simulation Conference, December 13-16, 2009, Austin, TX; M. Rossetti, R.Hill, B. Johansson, A. Dunkin and R. Ingalls (eds.), IEEE, pp: 148-161.

2. K. Talluri, G. van Ryzin, I. Karaesmen and G. Vulcano. Revenue Management: Models and methods. Proceedings of the 2008 Winter Simulation Conference, December 7-10, 2008, Miami, Florida; S. Mason, R. Hill, L. Moench, and O. Rose (eds.), IEEE, pp: 145-156.

3. F. Bernstein and G. Vulcano. Pricing and Revenue Management: Present and trends. Boletín de la Sociedad Española de Estadística e Investigación Operativa, Vol. 23(4): 9-12, 2007.

## Consulting Experience

− *Grupo Flechabus, Argentina.* Long-distance bus service company with largest market share in the country. Consulting for the implementation of dynamic pricing mechanisms (2016).

− *Movie Center, Uruguay.* Entertainment industry. Analysis and redesign of customer service processes in order to improve the customer flow and reduce the waiting time in the different stages of the system (2014).

− *Aerolíneas Argentinas:* Calibration of the forecasting module of the Revenue Management system (Sabre AirMax), and adjustment of fares for capacity control purposes (2010).

− *Standard Bank Argentina:* Assesment of the quality of customer service in the branches located in the Buenos Aires metropolitan area. Study of the capacity calculation to decide staffing levels and improvement of the waiting time management (2009).

− *Delta Technology, a division of Delta Airlines (Georgia, U.S.A.)*: Estimation of customer choice behavior for the New York – Florida commercial airline markets, and assessment of the revenue impact of accounting for choice behavior when optimizing the availability of the different fare-classes in the economic cabin (2005).

− *SpotsAuction.com (Kansas, U.S.A.)*: Consultant for the design of auction mechanisms for "last minute" broadcast industry (December 2004). Site available since 2005.

− *Dash Optimization (New Jersey, U.S.A.)*: Analysis and programming to modify a scheduling system for the graph industry. (Summer internship, 1999).

− *World Bank Project for the AFIP (Argentina)*: Consultant for designing and programming of a system to authorize the printing of new debit notes through the Internet (March – August 1998).

− *CIRPC, Perez Companc Holding Group (Argentina)*: Consultant for the implementation of solutions using mathematical models and simulation to assist in chemical and biological issues related to assisted reproduction (1996-1998).

## Fellowships and Funding

– Research fund provided by Sabre Holdings for the project "Computing bid-prices for revenue management under customer choice behavior", for the period April 2008 – March 2009.

– Research fund provided by Delta Technology for a project on estimating customer choice behavior for US markets, for the calendar year 2005.

– Fellowship and tuition for Doctoral studies supported by the Graduate School of Business, Columbia University (September 1998- May 2002).

– Fellowship awarded by the Ministry of Education of Argentina to support Doctoral students in foreign countries (1998-2000)

## Honors and Awards

– Best Paper Award 2021 of the INFORMS Technology, Innovation Management and Entrepreneurship (TIMES) Section for "Optimizing product launches in the presence of strategic consumers" (Management Science 2016)

– Co-advisor of D. Mitrofanov, 2nd place of the INFORMS MSOM Student Paper Competition 2019 for the paper "Inferring consideration sets from sales transaction data".

– Recipient of the INFORMS Revenue Management and Pricing Section Award, as co-author of the paper "Estimating Primary Demand for Substitutable Products from Sales Transaction Data", published in *Operations Research*.

– Co-advisor of X. Hu, runner-up of the AGIFORS Anna Valicek contest 2011 for the paper "Revenue sharing in airline alliances".

– Meritorious Service Award 2004 and 2009, INFORMS *Manufacturing and Service Operations Management* journal.

– Advisor of J. Chaneton, recipient of a Honorable Mention of the AGIFORS Anna Valicek contest 2009 for the paper "Computing bid-prices for revenue management under customer choice behavior".

– AGIFORS Revenue Management & Cargo Study Groups 2008 Annual Meeting, Tahiti, French Polynesia. Second Best Presentation Award.

– Advisor of J. Miranda Bront, recipient of the AGIFORS Anna Valicek Medal 2007 for the paper "A column generation algorithm for the choice-based linear programming model for network revenue management".

– Honorable mention, Sadosky Awards 2007 (Argentina), for the research project "A column generation algorithm for choice-based network revenue management".

– AGIFORS Revenue Management & Cargo Study Groups 2006 Annual Meeting, Cancún, Mexico. Honorable mention for the Best Presentation Award.

– AGIFORS Revenue Management Study Group 2005 Annual Meeting, Cape Town, South Africa. Best Technical Presentation Award.

- Junior Faculty Interest Group at INFORMS: Finalist in the 2004 Paper Competition for the paper "Online Auction and List Price Revenue Management".

- George Nicholson Student Paper Competition 2001 (INFORMS): second prize, for the paper "Optimal Dynamic Auctions for Revenue Management".

- Manufacturing and Service Operations Management division at INFORMS, Student Paper Competition 2001: second prize, for the paper "Optimal Dynamic Auctions for Revenue Management".

- Dean's List, Columbia Business School (1998-2000)

- Argentine national contest of master thesis in computer science, organized by the Argentine Society of Informatics and Operations Research (SADIO), first prize winner in the 1997 edition for the thesis "Survivability of Communication Networks: a solution using Taboo Search".

## Professional Activities

- Member of the Practice Prize Committee of the INFORMS Revenue Management and Pricing Section (2024).

- Co-editor of the Revenue Management and Market Analytics area of the INFORMS journal Operations Research (2018-2023).

- Associate editor of the INFORMS Management Science journal (2010-2021).

- Member of the Section Prize Committee of the INFORMS Revenue Management and Pricing Section (2020, 2021).

- Member of the MSOM Young Scholar Award Committee (2020).

- Associate editor of the INFORMS journal Operations Research (2008-2017).

- Officer of the INFORMS Revenue Management and Pricing Section: Vice-chair (2015-16), Chair (2016-17), Past-chair (2017-18).

- Member of the Organizing Committee, INFORMS Revenue Management & Pricing Section Annual Meeting 2016, New York, NY.

- Member of the committee for the INFORMS Revenue Management Section Prize Awards for the 2011 edition.

- Organizer of the Revenue Management & Pricing cluster for the joint ALIO/ INFORMS Conference, Buenos Aires, Argentina, 2010.

- Co-organizer of the Revenue Management & Pricing cluster for the INFORMS Annual Meeting 2008, Washington D.C.

- Member of the scientific committee of the INFORMS Revenue Management Conference, Montreal, Canada, June 2008.

- Member of the Editorial Board, INFORMS Journal of Manufacturing and Service Operations Management (2004-05).

- Referee for the following journals: Management Science, Operations Research,

M&SOM, Transportation Science, INFORMS Journal on Computing, Naval research Logistics, European Journal of Operational Research, Production and Operations Management.

– Member of INFORMS, the INFORMS MSOM Society, and the INFORMS Revenue Management Section.

## Personal

– Born September 29$^{th}$, 1969, in Buenos Aires, Argentina. Argentinean and Italian citizen. U.S. permanent resident.