



Prof. Edgar Possani PhD
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Profile

Experienced academic and researcher in Operational Research, Applied Mathematics, and Management Science. Over twenty years of experience in teaching, supervising theses, and conducting high-impact research in optimisation, and mathematical modelling with a focus in inventory, scheduling, and transport management. Recognised member of the Mexican National System of Researchers (SNII Level I, CONAHCYT, Mexican Ministry of Science and Technology- SECHITI).

Education

PhD in Operational Research, University of Southampton, UK (2001)
Diploma in Applied Statistics, ITAM, Mexico (1997)
BSC. In Mathematics, ITAM, Mexico (1995)

Selected Publications

G. Araujo-Pardo, J. De Loera, A. Figueroa, A. Gamma-Dessavre, E. Possani (2025) “The computational challenge of constructing cages and (k,g) -graphs” *Handbook of Visual, Experimental and Computational Mathematics- Bridges through data*, Springer.
https://doi.org/10.1007/978-3-030-93954-0_56-1

M. Cabo Nodar, E. Possani (2024) “Determining inventory, purchasing and cutting policies to manage imperfect and perishable raw material” *International Journal of Management Science and Engineering Management* Vol. 19, Issue 4, pp. 365-377.
<https://doi.org/10.1080/17509653.2024.2377155>

E. Possani, E. Castillo (2021) “Optimizing the inventory and routing decisions in a bike-sharing system: a linear programming and stochastic approach” *Case Studies on Transport Policy* Vol. 9, Issue 4, pp. 1492-1502.
<https://doi.org/10.1016/j.cstp.2021.07.006>

Archibald, T.W.; Possani, E. (2021) “Investment and Operational Decisions for Start-up Companies: a Game Theory and Markov Decision Process Approach” *Annals of Operations Research* Vol. 299, pp. 317-330
<https://doi.org/10.1007/s10479-019-03426-5>

Y.A. Ríos Solís, O.J. Ibarra Rojas, M. Cabo, E. Possani, (2020) “A heuristic based on mathematical programming for a lot-sizing and scheduling problem in mold-injection production” *European Journal of Operational Research* Vol. 284, pp. 861-873.
<https://doi.org/10.1016/j.ejor.2020.01.016>

Academic Appointments

Full Professorship, ITAM- Instituto Tecnológico Autónomo de México (2012- present)
Associate Professor, ITAM- Instituto Tecnológico Autónomo de México (2006-2011)
Guest Researcher, IMP- Mexican Institute of Petroleum (2003-2006)
Research Fellow, Management School, University of Southampton (2001-2003)

Supervision and Teaching

Supervised over 25 undergraduate and postgraduate theses in applied mathematics, operations research, and data science at ITAM. Many with honorary distinctions and best thesis awards.

Imparted over seventy semester-long lectures in various topics: Operations Research, Linear Programming, Linear Algebra, and Calculus. Postgraduate workshops on Scheduling for the Mexican OR Society (SMIO).

Published four teaching textbooks in Spanish: Statistics and Probability, Calculus, Algebra, and Elemental Algebra (for the Editorial houses: Santillana and Trillas)

Professional Memberships

Mexican Operational Research Society (SMIO). Elected as Vice-president (2019-2021)

Mexican Mathematical Society (SMM). Elected as Secretary General (2016-2018)

Recent Talks

“Minimizing transport costs and CO2 emissions: a vehicle routing and inventory control model for coin distribution” (2025), 34th European Conference on Operational Research. Leeds University, Leeds, United Kingdom.

“Optimizing a shared-bicycle network: the EcoBici case in Mexico City” (2025), Plenary Talk, II National Congress of the Mexican Academic Network for Public Transport. <https://www.youtube.com/live/dd6ETCLRvEg> (go to 4hr:24.17 min)

Research Grants and Awards

Grants and Scholarships:

Santander Bank (Mexico, 2023); International Association for Statistical Computing- LACSC (Mexico, 2021); CONAHCYT Sabbatical Fellowships (Southampton, UK- 2015); Banff International Research Station (Mexico, 2015); Abbey-Santander Bank (Edinburgh- UK, 2009), Xunta de Galicia (Spain, 2008 & 2009).

Research Funding:

2008-2011: Co-principal Researcher: CONAHCYT - Project No. 62375, ‘The use and application of models to develop meaningful learning of Linear Algebra concepts’.
2003-2005: Visiting Researcher Mexican Institute of Petroleum- IMP: Seed Project I.00240, ‘Optimization and Economic Evaluation Laboratory’.
2001-2003: Research Fellow: EPSRC- UK Grant Ref: GR7R22278/01 ‘Optimizing the Survival Probability of Start-up Companies’ University of Southampton.