

Edgar Possani Espinosa

Academic Profile

Since 2006 I have been full-time professor at [ITAM](#). I've had other full-time academic positions as *visiting researcher* (2003-2005) at [IMP - Mexican Institute of Petroleum](#), and as *research fellow* (2001-2003) at the [University of Southampton](#) (United Kingdom); and temporary appointments as *visiting academic* (2014-15) at [CORMSIS](#) (United Kingdom), *visiting scholar* (2009) at the [University of Edinburgh](#) (United Kingdom), *profesor visitante* (2008 & 2009) at the [Universidad de Coruña](#) (Spain), *visiting researcher* (2003) at [Monash University](#) (Australia). I'm founding member and present vice-president of the of the [Mexican Operations Research Society](#) (2019-2021) and was Secretary General of the [Mexican Mathematical Society](#) (for the 2016-2018 period).



My main research interest is on discrete optimization and modeling. I've worked with a variety of techniques in operations research, from dynamic programming, Markov decision processes to data envelopment analysis and heuristic design, with applications to scheduling, risk analysis and data mining. I am also interested in the use of models for teaching linear algebra to undergraduate students.

My consultancy work has been mainly in the Oil Industry in Mexico and small manufacturing companies in Australia. It has focused mainly in the design and implementation of decision software and optimizing processes.

Funding Awards

I'm a member of the [S.N.I. – Mexican National System of Research Scientists](#), an honor for scientific merit since 2005, currently Level I. I've had funding for research project form CONCAyT- Mexican National Research Council (grant No. 62375), from the [Engineering and Physical Sciences Research Council](#), U.K. (project GR7R22278/01), and from the Mexican Institute of Petroleum (seed project: I.00240), as well as visiting grants from [EURO](#), [CORMSIS](#), Xunta de Galicia, y del Abbey-Santander Bank.

Teaching Experience

I've given several courses on operations research, linear programming, and linear algebra among others. I've supervised more than twenty theses with applications to vehicle routing, methods for breast cancer prediction, efficiency evaluation, credit risk and arbitrage detection in the exchange rate market, among others.

Recent Research Papers

- [Investment and Operational Decisions for Start-up Companies: a Game Theory and Markov Decision Process Approach](#), T.W. Archibald, E. Possani (2021) *Annals of Operations Research* Vol. 299, pp. 317-330 Vol. 284, pp. 861-873
- [A heuristic based on mathematical programming for a lot-sizing and scheduling problem in mold-injection production](#), Y.A. Ríos Solís, O.J. Ibarra Rojas, M. Cabo, E. Possani (2020) *European Journal of Operational Research* Vol. 284, pp. 861-873

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- [Bi-objective scheduling on a restricted batching machine](#), M. Cabo, J.L. González-Velarde, E. Possani, Y.A. Ríos Solís (2018) *Computers and Operations Research* Vol. 100, pp. 201-210
- [An APOS Approach for Matrix Multiplication and Transformations](#) A.P. Figueroa, E. Possani, M. Trigueros (2018) *Journal of Mathematical Behavior* Vol. 52, pp. 77-91
- [An Analysis of Different Representations for Vectors and Planes in \$\mathbb{R}^3\$: Learning Challenges](#), I. Sandoval & E. Possani (2016) *Educational Studies in Mathematics* Vol. 92, Issue 1, pp. 109-127
- [Managing inventory and production capacity in start-up firms](#), L.C. Thomas, T. Archibald & E. Possani (2015) *Journal of the Operational Research Society* Vol. 66, Issue 10, pp. 1624–1634
- [Split-Merge: Using Exponential Neighborhood Search for Scheduling a Batching Machine](#), M.Cabo, E. Possani, C.N. Potts & X.Song (2015) *Computers and Operations Research* Vol. 63, I pp. 125–135.
- [Considerations on Applying Cross Entropy Methods to the Vehicle Routing Problem](#), M. Cabo & E. Possani (2015) *International Journal of Combinatorial Optimization Problems and Informatics* Vol. 6, No. 3, (Sep-Dec 2015) pp. 22–33.
- [Using an economics model for teaching linear algebra](#), M. Trigueros & E. Possani, (2013) *Linear Algebra and Its Applications* Vol. 438, Issue 4, pp. 1779–1792
- [A circulation network model for the exchange rate arbitrage problem](#), C.A. Cantú & E. Possani, (2012) *Journal of Business & Economics*, Vol.4 (No.1), pp.30-61.
- [Lot streaming multiple jobs in a flow Shop](#), C.A. Glass & E. Possani, (2011) *International Journal of Production Research*, 49 (9), pp.2669-2681.

[Google Scholar Profile](#) : (h index: 9 , 238 citations)

Researchgate Profile: <https://www.researchgate.net/profile/Edgar-Possani>

Text Books (In Spanish)

- Cálculo y Estadística (2011) Santos Serrano D., Possani Espinosa E., et. al., ISBN 978-84-294-7088-8, Editorial Santillana. (431 pages)
- Álgebra (2011) Cabo Nodar M., Possani Espinosa E., ISBN 978-607-01-0740-5, México, Editorial Santillana. (398 pages)
- Álgebra Elemental (2009) B. Rumbos, D Avella Alaminos, M. A. A. Reyes Guerrreo E. Possani, et. al., ISBN 978-607-17-099-5, Editorial Trillas, (287 pages).
- Estadística y Probabilidad (2008) E. Possani & L. Barreiro, ISBN 978-970-29-2166-0, Editorial Santillana, (303 pages).