Julio C. Góez

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Research interests

My research revolves around designing and implementing algorithms for mixed-integer non-linear optimization and its applications. My current research focuses on application areas such as computer networks, autonomous vehicles for transportation networks, logistic challenges in small cities and rural regions, salmon farming, and agriculture.

Education

◇ **Ph.D. in Industrial Engineering (2007–2013)**, Lehigh University, Bethlehem, PA.
Thesis supervisor: Tamás Terlaky.
Thesis Title: Mixed Integer Second Order Cone Optimization,
                Disjunctive Conic Cuts: Theory and experiments.

◇ **M.Sc. in Industrial Engineering (2002–2004)**, University of Los Andes, Colombia.
Major: Operations Research.

◇ **B.Sc. in Industrial Engineering (1996–2002)**, University of Antioquia, Colombia.

Executive Education

◇ **International Research Management Course (2022)**, Copenhagen Business School, Copenhagen, Denmark.

Experience

◇ **Associate Professor**, Department of Business and Management Science,
NHH Norwegian School of Economics (January 2020 – present)

◇ **Assistant Professor**, Department of Business and Management Science,
NHH Norwegian School of Economics (December 2015 – December 2019)

◇ **Postdoctoral Fellow**, GERAD and École Polytechnique de Montréal
(November 2013 – November 2015)

◇ **Instructor**, Department of Industrial Engineering,
University of Los Andes (August 2004 – July 2007)

Published refereed articles

◇ Rezaeinia, N., Góez, J.C., Guajardo, M., On efficiency and the Jain's fairness index in integer assignment problems. Accepted for Computational Management Science, 2023.

◇ Hong Nguyen, G.T., Ruzaeva, Góez, J.C., Guajardo, M., Insights on the introduction of autonomous vessels to liner shipping networks. *Journal of Shipping and Trade*, 7, 12, 2022.

◇ Rezaeinia, N., Góez, J.C., Guajardo, M., Efficiency and fairness criteria in the assignment of students to projects. *Annals of Operations Research*, 2021.

◇ Gu, Y., Góez, J.C., Guajardo, M., Wallace, S.W., Autonomous vessels: State of the art and potential opportunities in logistics. *International Transactions in Operational Research*, Volume 28, Issue 4, July 2021.

◇ Góez, J.C., Anjos, M.F., Second-Order Cone Optimization Formulations for Service System Design Problems with Congestion. In: Pintér J., Terlaky T. (eds) *Modeling and Optimization: Theory and Applications. MOPTA 2017. Springer Proceedings in Mathematics & Statistics*, Volume 279, 2019.

◇ Shahabsafa, M., Góez, J.C., Terlaky, T., On Pathological Disjunctions and Redundant Disjucntive Conic Cuts. *Operations Research Letters*, Volume 46, Issue 5, September 2018.

◇ Pérez, J.F., Silva, D., Góez, J.C., Sarmiento, A., Sarmiento A., Akhavan, R., Riaño, G., jMarkov: an integrated framework for Markov chain modeling. *ACM Transactions on Mathematical Software (TOMS)*, Volume 43, Issue 3, January 2017.

◇ Belotti, P., Góez, J.C., Pólik, I., Ralphs, T., Terlaky, T., A complete characterization of disjunctive conic cuts for mixed integer second order cone optimization. *Discrete Optimization*, Volume 24, Pages 3 – 31, 2017.

◇ Belotti, P., Góez, J.C., Pólik, I., Ralphs, T., and Terlaky, T., A conic representation of the convex hull of disjunctive sets and conic cuts for integer second order cone optimization. In Al-Baali, M., Grandinetti, L., and Purnama, A. (editors), *Numerical Analysis and Optimization*, Volume 134 of *Springer Proceedings in Mathematics & Statistics*, Pages 1 − 35. Springer International Publishing, 2015.

◇ Belotti, P., Góez, J.C., Pólik, I., Ralphs, T., and Terlaky, T., On families of quadratic surfaces having fixed intersections with two hyperplanes. *Discrete Applied Mathematics*, Volume 161, Issues 16 − 17, November, Pages 2778 − 2793, 2013.

◇ Riaño, G., Góez, J.C., jMarkov: An object oriented framework for modeling and analyzing Markov chains and QBDs, *ACM International Conference Proceeding Series*, Vol. 201, Proceeding from the 2006 workshop on tools for solving structured Markov chains, Article No. 6, October 10, 2006, Pisa, Italy.

Working papers ◇ Rezaeinia, N., Góez, J.C., Guajardo, M., Scheduling conferences based on attendees' preferences. Submitted to JORS.

◇ Orhan, C.C, Góez, J.C., Guajardo, M., Osicka, O., Wallace, S.W., Assessing macro effects of freight consolidation on the livability of small cities using vehicle routing as micro models: The case of Bergen, Norway. Submitted to Transportation Research Part E.

◇ Narum, B.S., Góez, J.C., Wallace, S.W., Harvest Planning under Uncertainty in Norwegian Aquaculture.

◇ Góez, J.C., Perez, J.F., An ϵ outer linear approximation optimization model for deployment of geo-distributed cloud applications.

Funded projects ◇ **OPTINORFARM** - **Economic and Environmental Optimization of Norwegian Farms**
Agency: The research council of Norway, 2023 - 2026.
Amount: NOK 10000000
Role: Researcher, responsible for the user application word package

◇ **Freight Logistics in Sustainable Cities**:
Agency: The research council of Norway, 2020 - 2024.
Amount: NOK 9928000
Role: Researcher, responsible for the data management work package

◇ **Optimal risk based short term decision making for aquaculture**:
Agency: The research council of Norway, 2020 - 2022.
Amount: NOK 2000000
Role: PI, responsible for the scientific development of the optimization methodologies

◇ **Logistics and Economics of Autonomous Vessels**:
Agency: The research council of Norway, 2018 - 2021.
Amount: NOK 9786000
Role: Researcher

Editorial work ◇ Guest editor for the journal *Flexible Services and Manufacturing*, special issue "Analytics and models for maritime logistics and systems" for LOGMS 2017, first online June 2019.

◇ Guest editor for the journal *Computational Management Science*, special issue "2021 NORS conference".

Service ◇ Elected representative for the permanent academic staff to the board of the Department of Business and Management Science's at NHH, August 2021 − August 2023.

◇ Chair for the organizing committee of the NORS 2021 conference, November 17 − 18, 2021.

◇ Elected chair of the executive board of the Norwegian Operations Research Society, January 2018 − December 2022.

◇ Member of the organizing committee of LOGMS 2017, August 23 − 26, 2017.

Memberships and activities

◇ Institute for Operations Research and Management Sciences (INFORMS), 2008 – Present.

◇ INFORMS Computing Society, 2008 – Present.

◇ INFORMS Optimization Society, 2008 – Present.

◇ INFORMS Trasportation Science and Logistics, 2008 – Present.

◇ The Norwegian Operations Research Society (NORS), 2015 – Present.

Awards

◇ GERAD Postdoctoral Scholarship, 2013.

◇ Ph.D. Student of the year, Department of Industrial and Systems Engineering, Lehigh University, 2012.

◇ Ph.D. Student of the year, Department of Industrial and Systems Engineering, Lehigh University, 2010.

◇ Rossin Doctoral Fellow, Faculty of Engineering, Lehigh University, 2009 – 2013.