

Jorge A. Huertas

☎ +1(628) 946 9274 • ✉ huertas.ja@gatech.edu • [📁/jorgehuertas](https://github.com/jorgehuertas) • [🔍 Google Scholar](https://scholar.google.com/citations?user=...) • [🌐 Website](https://www.jorgehuertas.com)

Profile

Ph.D. student with research interests in combining data analysis, mathematical modelling, computational simulation, and artificial intelligence to tackle problems in manufacturing, transportation, logistics, and communications systems.

Education

- Aug, 2020 – Present **Ph.D. student in Operations Research. Georgia Institute of Technology** – Atlanta, GA.
- Jun, 2024 M.Sc. in Operations Research. Georgia Institute of Technology – Atlanta, GA, USA.
- Oct, 2016 M.Sc. in Industrial Engineering. Universidad de los Andes – Bogotá, Colombia.
- Jan, 2016 Six Sigma (6σ) Black Belt. Arizona State University – Tempe, AZ, USA.
- Mar, 2015 B.Sc. in Industrial Engineering. Universidad de los Andes – Bogotá, Colombia.
- Mar, 2015 B.Sc. in Systems and Computing Engineering. Universidad de los Andes – Bogotá, Colombia.

Publications

- Constraint programming models for serial batch scheduling with minimum batch size. **Jorge A. Huertas** and Pascal Van Hentenryck. *Operations Research Perspectives*. Sep, 2025. doi: [10.1016/j.orp.2025.100352](https://doi.org/10.1016/j.orp.2025.100352)
- Parallel batch scheduling with incompatible job families via constraint programming. **Jorge A. Huertas** and Pascal Van Hentenryck. *IEEE Transactions on Semiconductor Manufacturing*. Aug, 2025. doi: [10.1109/TSM.2025.3601510](https://doi.org/10.1109/TSM.2025.3601510)
- Large-scale zone-based evacuation planning: generating convergent and non-preemptive evacuation plans via column generation. **Jorge A. Huertas** and Pascal Van Hentenryck. *In the Proceedings of the 55th Hawaii International Conference on System Sciences*. Jan, 2022. doi: [10.24251/HICSS.2022.307](https://doi.org/10.24251/HICSS.2022.307)
- Pedestrian evacuation planning: unveiling evacuation routes via column generation. Nicolás Cabrera, **Jorge A. Huertas**, and Andrés L. Medaglia. *EURO Journal on Transportation and Logistics*. Volume 11, 2022, 100089. doi: [10.1016/j.ejtl.2022.100089](https://doi.org/10.1016/j.ejtl.2022.100089)
- Time estimation and hotspot detection in the evacuation of a complex of buildings: a mesoscopic approach and case study. Jony A. Zambrano, **Jorge A. Huertas**, Ethel Segura-Durán, and Andrés L. Medaglia. *IEEE Transactions on Engineering Management*. Volume 67, Issue 3, 2020, p. 641 - 658. doi: [10.1109/TEM.2019.2960354](https://doi.org/10.1109/TEM.2019.2960354)
- Evacuation dynamics: a modeling and visualization framework. **Jorge A. Huertas**, Daniel Duque, Ethel Segura-Durán, Raha Akhavan-Tabatabaei, and Andrés L. Medaglia. *OR Spectrum*. Volume 42, 2020, p. 661691. doi: [10.1007/s00291-019-00548-x](https://doi.org/10.1007/s00291-019-00548-x)
- Level of traffic stress-based classification: a clustering approach for Bogotá, Colombia. **Jorge A. Huertas**, Alejandro Palacio, Marcelo Botero, Germán A. Carvajal, Thomas Van Laake, Diana Higuera-Mendieta, Sergio Cabrales, Luis A. Guzmán, Olga L. Sarmiento, and Andrés L. Medaglia. *Transportation Research Part D: Transport and Environment*. Volume 85, 2020, p. 102420. doi: [10.1016/j.trd.2020.102420](https://doi.org/10.1016/j.trd.2020.102420)
- The role of engineering in the COVID-19 pandemic (in Spanish). Paola Betancourt Ruiz, Marcela Guevara Suárez, Marylin Hidalgo, Silvia Restrepo, Erik Potdevin, **Jorge A. Huertas**, Andrés Medaglia, Juan Pedraza, Martha Cepeda, Pablo Arbeláez. *Revista de Ingeniería*. Volume 50, 2020, p. 8-13. doi: [10.16924/revinge.50.1](https://doi.org/10.16924/revinge.50.1)
- Addressing cooperation between mobile operators in telecommunication networks via optimization: a lexicographic approach and case study in Colombia. Francisco J. MacAllister, Laura Maya, **Jorge A. Huertas**, Carlos Lozano-Garzón, and Yezid Donoso. *International Journal of Computers Communications & Control (IJCCC)*. Volume 15, Issue 6, 2020, p. 1-16. doi: [10.15837/ijccc.2020.6.3975](https://doi.org/10.15837/ijccc.2020.6.3975)
- Multi-objective tabu search to balance multihoming loads in heterogeneous wireless networks. **Jorge A. Huertas**, and Yezid Donoso. *International Journal of Computers Communications & Control (IJCCC)*. Volume 13, Issue 6, 2018, p. 956-971. doi: [10.15837/ijccc.2018.6.3360](https://doi.org/10.15837/ijccc.2018.6.3360)

Preprints

- MARTA Reach: pilot of an on-demand multimodal transit system in Atlanta. Pascal Van Hentenryck, Connor Riley, Anthony Trasatti, Hongzhao Guan, Tejas Santanam, **Jorge A. Huertas**, Kevin Dalmeijer, Kari Watkins, Juwon Drake, Samson Baskin. Oct, 2023. doi: [10.48550/arXiv.2308.02681](https://doi.org/10.48550/arXiv.2308.02681)

Technical reports

- Two-stage analytics framework for warehouse location for Rappi: a case study in Ciudad de Mexico (Mexico). Ana María Quintero-Ossa, **Jorge A. Huertas**, Carlos Lozano-Garzón, Alejandro Correa-Bahnsen, Yezid Donoso, and Andrés L. Medaglia. *Technical report, COPA-2021-02*. Universidad de los Andes, 2021. url: <http://hdl.handle.net/1992/50594>
- Solving the time-ahead pricing of energy supply problem with nonlinear utility function for consumers via a bilevel optimization approach. **Jorge A. Huertas**, Daniel M. Eslava, Andrés F. Pardo, and Jaime E. González. *Technical report, COPA-2014-12*. Universidad de los Andes, 2015. url: <http://hdl.handle.net/1992/31241>

Awards

Advisor of the **best**
Latin American
undergraduate thesis

XV IISE Latin American Congress (Mar, 2018) – **San José, Costa Rica**.

- Thesis: A Column Generation Approach for Evacuation Planning.
- Authors: Nicolás Cabrera and **Jorge A. Huertas**

Winner
COPPTA TEAM
(Uniandes)

2014 AIMMS–MOPTA Optimization Modeling Competition. – **Lehigh University, PA, USA**.

- Proposed a cut-based heuristic to solve the *time-ahead pricing of energy supply* bilevel optimization problem for the Borough of Madison, NJ, USA.
- Competed against graduate teams from 22 international top universities.

Experience

Aug, 2020 – Present

Graduate Research Assistant. – Georgia Institute of Technology (Atlanta, GA).

- Advisor: Dr. Pascal Van Hentenryck.
- Research at [AI4OPT](#) combining **optimization** and **machine learning** to improve the supply chains for **semiconductor manufacturing**.
- Worked at the [Socially-Aware Mobility \(SAM\)](#) lab developing and deploying [MARTA Reach](#): Pilot of an on-demand multi-modal transit system in Atlanta, GA.
- Plan large-scale evacuations at a strategic level using **optimization** algorithms (Column Generation, Benders Decomposition) and validate them using traffic **simulation**.
- Teaching Assistant of the Seth Bonder Summer Camp on Computational and **Data Science**.

May – Aug, 2025

Student Researcher. Google – Planning Sciences Group - Global Networking – Google Cloud.

- Plan the future of Google’s core network.
- Implemented a module in the main planning system that reduced up to 30% the number of iterations between optimization and traffic engineering models required for planning.

May, 2022 – May, 2024

Operations Research Engineering Intern – **Intel Corporation**, CPLG - Supply Chain Management and Decisions Science (SMDS) Team.

- Developed a parameter tuning tool that improved the solve time performance of the master production scheduler up to 50%.
- Developed tools that automated conflict analyses tasks for the master production scheduler, reducing time required to troubleshoot production issues.
- Developed a Column-Generation decomposition for the production planning model that reduced the solve time performance of large-scale instances up to 40%.
- Developed a machine learning-based discrete-event simulation model to improve the cycle time prediction in wafer fabs.

Aug, 2016 – Dec, 2020

Instructor. Industrial Engineering Department, Universidad de los Andes – Bogotá, Colombia.

- Taught master lectures to approximately 200 students per semester:
 - Undergraduate courses on **optimization**, **simulation**, and data science.
 - Invited modules at graduate-level courses: **large-scale optimization** under uncertainty, **networks flows**, and **simulation**.
 - Youtube channel (Spanish): www.youtube.com/@jorge_huertas.
- Advised and co-advised academic and industry projects using *Analytics*, OR, and Six Sigma.
- **Researcher** at the [Center for Optimization and Applied Probability \(COPA\)](#).
 - Simulated the Gen-Core laboratory at Uniandes to optimize Covid-19 testing procedures.
 - Developed and implemented a **data-informed framework** to calculate the *Level of Traffic Stress* (LTS) of cyclists in Bogotá’s urban road network using a multidisciplinary approach.
 - Supported infrastructure decisions of the Campus Management Department using analytics.
 - Improved evacuation dynamics in the historic city center with key infrastructure adequacy interventions, obtained and evaluated combining **optimization and simulation** models.
 - Improved vertical flow of people in large buildings inside the campus by evaluating elevator configurations and new flow patterns using simulation models.

- Mar, 2019 – Sep, 2019 **Analytics consultant.** Bogotá's Planning Department – Bogotá, Colombia
- Conceived, developed, and implemented a **data-driven methodology** (using machine learning and GIS data) to classify Bogotá's urban road network for the city's new Territory Plan.
- Feb, 2018 – Jul, 2018 **Analytics Short-Term Consultant. The World Bank Group** – Bogotá, Colombia
- Worked with Bogotá's Mobility Department and *Despacio* foundation enhancing Bogotá's data infrastructure to monitor and promote non-motorized modes of transportation.

Conference talks

- Oct, 2023 A column-generation approach for wafer fab scheduling. **Jorge A. Huertas**, Ashish Nemani, Zhenying Zhao, and Pascal Van Hentenryck. INFORMS Annual Meeting – **Phoenix**, AZ, USA.
- Oct, 2021 Large-scale zone-based evacuation planning: Generating convergent and non-preemptive evacuation plans via column generation. **Jorge A. Huertas** and Pascal Van Hentenryck. INFORMS Annual Meeting – **Anaheim**, CA, USA.
- Oct, 2019 Data-driven origin-destination matrix estimation in large-scale integrated public transport systems. Alejandro Palacio, Marcelo Botero, **Jorge A. Huertas**, Carolina Osorio, Andrés L. Medaglia, and Sergio Cabrales. INFORMS Annual Meeting – **Seattle**, WA, USA.
- Oct, 2019 Analytics Framework To Improve Building Flow Dynamics. **Jorge A. Huertas**, Valeria Puyo, Liseth Daniela Grosso, Daniel Cifuentes, Diego Monroy, Maurix Suárez, Andres L. Medaglia. INFORMS Annual Meeting – **Seattle**, WA, USA.
- Jul, 2019 Multi-objective tabu search to balance multihoming loads in heterogeneous wireless networks. **Jorge A. Huertas** and Yezid Donoso. Metaheuristics International Conference (MIC) – **Cartagena**, Colombia.
- Jul, 2018 Modeling evacuation dynamics. **Jorge A. Huertas**, Jony A. Zambrano, Nicolás Cabrera, Daniel Duque, Ethel Segura-Durán, Raha Akhavan-Tabatabaei, and Andrés L. Medaglia. EURO Annual Meeting – **Valencia**, España.
- Oct, 2017 A mesoscopic model to evaluate the evacuation dynamics in a university campus. **Jorge A. Huertas**, Jony A. Zambrano, and Andrés L. Medaglia. INFORMS Annual Meeting – **Houston**, TX, USA.
- Nov, 2016 Supporting evacuation decisions via network optimization. **Jorge A. Huertas**, Daniel Duque, Ethel Segura-Durán, Raha Akhavan-Tabatabaei, and Andrés L. Medaglia. INFORMS Annual Meeting – **Nashville**, TN, USA.

Software and Programming skills

Advanced	Java, Python, Visual Basic, Xpress-IVE, Simio, Gurobi, Meteor, HTML.
Intermediate	L ^A T _E X, R, ArcGIS, AIMMS, Ruby on Rails, SQL, React Native, OPL.
Basic	CSS, JavaScript, C++, C#

Languages and affiliations

Languages	• Native: Spanish	• Fluent: English
Affiliations	INFORMS, IISE, ASOCIO.	

Hobbies and more

- 2024 – Present Snowboarding & Surfing.
- 2020 – Present Dj in Atlanta (GA) and Santa Cruz (CA).
- Soundcloud profile: www.soundcloud.com/jorge_huertas.
 - Youtube channel: www.youtube.com/@jorge-huertas.
- 2005 – 2015 Point guard and captain of different basketball teams in high school, college, and Colombia.

Jorge A. Huertas