

# Ignacio Erazo

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[Google Scholar](#)

## EDUCATION

- **Georgia Institute of Technology** Atlanta, USA  
*Ph.D. in Operations Research, minor in Machine Learning; GPA: 4.0/4 August 2019 - Dec 2023 (Expected)*  
*Courses: Optimization (Linear, Discrete, Nonlinear, Stochastic, Advanced Combinatorial), Stochastic Processes (I, II, Simulation and its Theory), Computational Methods, Constraint Programming, Theoretical Statistics, Machine Learning, Reinforcement Learning Theory.*
- **Georgia Institute of Technology** Atlanta, USA  
*M.Sc. in Operations Research; GPA: 4.0/4 August 2019-December 2021*
- **University of Concepcion** Concepcion, Chile  
*B.Sc. in Industrial Civil Engineering; GPA: 6.7/7; rank 1/120 March 2014-July 2019*  
*Courses: Traditional Engineering Classes + Optimization and Stats classes + Innovation, Entrepreneurship and Soft Skills classes.*

## EXPERIENCE

- **Amazon Science** Seattle, WA  
*Research Scientist Intern May 2023 - Aug 2023*
  - **Part of the Amazon Science Fulfillment Technologies Team:** Large-scale optimization models for picking in robotic warehouses.
- **Amazon** Edinburgh, Scotland  
*Applied Scientist Intern Sep 2022 - Dec 2022*
  - **Natural Language Processing — Machine Learning:** Developed topic models to support classification tasks for private data.
- **Apple** Sunnyvale, CA  
*Applied Scientist Intern in BPR's Advanced Analytics Team May 2022 - Aug 2022*
  - **Inventory Optimization:** Developed an analytical tool based on optimization that helps to reduce inventory levels.
  - **Software Development:** Developed the logic that allows different optimization tools to work simultaneously to reduce transportation costs.
- **Georgia Institute of Technology** Atlanta, GA  
*Teaching and Research Assistant Aug 2019 - Present*
  - **Head TA for Graduate Courses:** ISyE 6644 Simulation (Summer 2020, Fall 2020, Spring 2021), ISyE 6203 Logistics (Spring 2022) for the online and in-campus programs. Thank-a-Teacher recipient in Fall 2020, Spring 2022.
  - **TA in the tutoring center for undergrad Courses:** ISyE 3133 Optimization and ISyE 2027 Probability with Applications.
- **BHP Billiton** Santiago, Chile  
*Intern at the Inventory Optimization Team Jan 2019 - Mar 2019*
  - **Process automation:** Developed a new automatized dashboard in Power BI to show results for stakeholders of the supply team (saved 2 days of work a month).
  - **Holding Inventory Improvement:** Proposed and implemented a new inventory classification system leading to inventory savings of +5 Million USD.

## CURRENT PROJECTS

- **Submodular Dispatching Optimization:** Joint Work with Prof. Alejandro Toriello. Under major revisions at *Operations Research*.
- **Optimal Frank-Wolfe algorithm for Stochastic Optimization:** Joint Work with Hassan Mortagy and Prof. Siva Theja Maguluri.

## PUBLISHED JOURNAL PAPERS

- **Cost-Efficient Confidence Intervals for the Difference of Two Bernoulli Distributions' Success Parameters:** *Journal of Simulation* (to be published in 2023), joint Work with Prof. David Goldsman and Prof. Yajun Mei.
- **Efficient Confidence Intervals for the Difference of Two Bernoulli Distributions' Success Parameters:** *Journal of Simulation*, joint work with Prof. David Goldsman (2021).

## PUBLISHED PEER-REVIEWED CONFERENCE PAPERS

- **Smart Sports Predictions Via Hybrid Simulation: NBA Case Study:** *Winter Simulation Conference 2023* (accepted and to be presented), only author.
- **A Simulation-Optimization Framework to Improve the Organ Transplantation Offering System:** *Winter Simulation Conference 2022*, joint work with Prof. David Goldsman and Prof. Pinar Keskinocak (2022).
- **A Simulation-Based Approach to Compare Policies and Stakeholders' Behaviors for the Ride-Hailing Assignment Problem:** *Winter Simulation Conference 2021*, joint work with Prof. Rodrigo de la Fuente (2021).
- **Enabling Intelligent Processes in Simulation Utilizing the Tensor Flow Deep Learning Resources:** *Winter Simulation Conference 2018*, joint work with Prof. Rodrigo de la Fuente and Raymond Smith III (2018).

## HONORS AND AWARDS

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- NSF travel award for the [Triannual INFORMS TSL Conference](#).
- Best Applied Student paper, Winter Simulation Conference 2022.
- Diversity award for a Ph.D. student, Winter Simulation Conference 2022.
- Top 3 Short Research Video at the YinzOR 2021 Conference (Carnegie Mellon University), Submodular Dispatching.
- Stewart Fellowship in Georgia Tech.
- First place in 2019 “University of Concepcion” programming Competition, category “Non Computer Science Major”.
- University of Concepcion Prize (Class 2014 Industrial Civil Engineering). This award is given by the university to the most deserving student (if any) of the respective class.
- Best GPA class 2014 of Industrial Civil Engineering in years 2014, 2015, 2016, 2017, 2018, 2019.
- Leader of World Finalist Teams for Simio Simulation Competition (Fall 2016, Spring 2017).
- Highest Recognition “Très Bien” in French Baccalauréat, maximum scores in Mathematics, Physics and Chemistry.

## SKILLS SUMMARY

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- **Languages:** Spanish(+++), French(+++), English(+++)/, Python(+++), R(++), MATLAB(++), C++(+).
- **Software:** Gurobi(+++), Cplex(++), Xpress(++), SIMIO(+++), Sklearn(+++) ,Scikit(++), Matplotlib(++).
- **Soft Skills:** Leadership, Time Management, Eager to Learn, Hard-worker, Responsibility.

## VOLUNTEER EXPERIENCE

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- **EJOR Reviewer** Remote  
*Reviewer for the European Journal of Operational Research.* 2022-Present
- **ISyE's GSAC** Atlanta, USA  
*Part of ISyE's Graduate Student Advisory Council (GSAC).* 21-22, 22-23 Academic Years
- **CoE GSAC** Atlanta, USA  
*Only ISyE representative in the College of Engineering GSAC.* 21-22, 22-23 Academic Years