

Juan C. David Gómez

Industrial and Systems Engineering
University of Wisconsin-Madison
3239 Mechanical Engineering Building
1513 University Avenue
Madison, WI 53706
davidgomez@wisc.edu

Profile

PhD student with expertise in causal inference and risk prediction approaches from observational data, with a focus on health care applications. Additional experience in mathematical modeling for finance and actuary. Interested in operations research, causal inference, data analytics, and optimization. Seeking internship in operations research, optimization, data analytics, and related areas.

Education

University of Wisconsin-Madison PhD Industrial Engineering (Decision Sciences & Operations Research) Minor: Mathematics Advisor: Gabriel Zayas-Cabán	<i>08/2018 – present</i> <i>Madison, WI</i>
University of Antioquia BA in Mathematics (thesis T.01)	<i>2011 – 2017</i> <i>Medellín, CO</i>

Professional Experience

MathDecision (http://www.mathdecision.com/)	<i>2016 – 2018</i> <i>Medellín, CO</i>
<ul style="list-style-type: none">• Developed probabilistic models for bank stress testing (e.g. market, credit, and liquidity risks).• Developed outlier detection algorithms to prevent money laundering in financial institutions.• Developed actuarial models for calculating reserves for pension bonds.	

- Implemented a stock market simulator that tested high frequency trading strategies.
- Analyzed market data using Python libraries such as Pandas. Trained models using Python libraries Statsmodels and Scikit-learn.
- Contributed to Front-End (Angular, Javascript, CSS) development of user interfaces.

Publications

Refereed Journal Articles (appeared or accepted)

- David-Gomez, J. C.**, Cochran, A., Smith, M., and Zayas-Cabán, G.. Prediction of rehospitalization risk for skilled nursing facilities using a dimension reduction approach. *BMC Geriatrics* *J.01*
- Gruichich, T., **David Gómez, J. C.**(co-first author), Zayas-Cabán, G., Mcinnis, M. and Cochran, A.L. (2021). A digital self-report survey of mood for bipolar disorder. *Bipolar Disorders*. *J.02*

Under Review or Revision for Archival Journals

- David Gómez J. C.**, Cochran, A., Patterson, B.W. and Zayas-Cabán, G. Evaluation of a Split Flow Model for the Emergency Department. *S.01*
- David-Gomez, J. C.**, Cochran, A.L. and Zayas-Cabán, G. Unveiling bias in sequential decision making: A causal inference approach for stochastic service systems. *S.02*

Working Papers

- David-Gomez, J. C.**, Cochran, A.L. and Zayas-Cabán, G. Quasi-experimental designs for learning health systems with imperfect compliance. *W.01*

Thesis

- David Gómez J. C.** (2017). The Elliptical Curve Method for the Factorization of Integer Numbers.. *University of Antioquia, Bachelor thesis*, Medellín, Colombia. *T.01*

Skills

IT

Python (Advanced), R, Julia, Git, Spark, TensorFlow, Javascript, Google Cloud Platform, Latex, Jupyter notebook.

Languages

Spanish (Native), English (Fluent)

Presentations

INFORMS Annual Meeting Unveiling bias in sequential decision making: A causal inference approach for stochastic service systems	<i>10/2023</i> <i>Phoenix, AZ</i>
INFORMS Annual Meeting Average Spillover Effects for Sequential Interventions in Stochastic Service Systems	<i>10/2021</i> <i>Anaheim, CA</i>
INFORMS Healthcare Evaluation of a Split Flow Model for the Emergency Department	<i>06/2021</i> <i>Virtual</i>
INFORMS Annual Meeting Impact of Split-flow Models in Emergency Departments on Patient Outcomes	<i>11/2020</i> <i>Seattle, WA</i>