

# ANDREW K. ELHABR

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## EDUCATION

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**Georgia Institute of Technology**, Atlanta, GA USA

Ph.D., Operations Research (Minor: Economics), June 2022 (Expected)

- *Thesis*: Essays on Healthcare Outcomes and Value-based Care

M.S., Operations Research, June 2022 (Expected)

Research Interests:

- *Methodology*: data analytics, machine learning methods, game theory, econometric modeling, causal inference, decision analysis, simulation
- *Applications*: health economics and outcomes, payment and reimbursement models, clinical decision-making, real-world evidence, pharmaceutical supply chain, telehealth

**University of Texas at Austin**, Austin, TX USA

B.S., Mechanical Engineering (Minor: Economics), May 2016

GPA: 3.9/4.0

## PUBLISHED PAPERS

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**A. ElHabr**, S. Merdan, R. Duscak, M. Horný, T. Hanna, A. Prater, T. Ayer, D. Hughes (2022). Increasing Utilization of Emergency Department Neuroimaging From 2007 Through 2017. *American Journal of Roentgenology*, 218(1), 165-173. [paper](#)

**A. ElHabr**, J. Katz, J. Wang, M. Bastani, G. Martinez, M. Gribko, D. Hughes, P. Sanelli (2021). Predicting 90-Day Modified Rankin Scale Score with Discharge Information in Acute Ischaemic Stroke Patients Following Treatment. *BMJ Neurology Open*, 3(1). [paper](#)

## WORKING PAPERS

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**A. ElHabr**, T. Ayer, C. Zhang (2022). Outcome-based Pharmaceutical Contracting with Heterogenous Patient Groups. *Target Journal: Management Science*.

**A. ElHabr**, T. Ayer, J. Newsome, N. Kokabi, R. Smith, J. Gichoya (2022). Racial Disparities in Utilization of Interventional Radiology, Operative, and Non-operative Hemorrhage Management for Patients with Traumatic Injuries: A National Trauma Data Bank Study. *Target Journal: Journal of Vascular and Interventional Radiology*.

**A. ElHabr**, T. Ayer, J. Katz, J. Wang, M. Bastani, M. Gribko, D. Hughes, P. Sanelli (2022). Development and Validation of an Administrative Claims Stroke Severity Score via Ensembling Across Multiple Databases. *Target Journal: Journal of Stroke and Cerebrovascular Diseases*.

N. Shiban, J. Gaul, H. Zhang, **A. ElHabr**, N. Kokabi, J. Johnson, T. Hanna, J. Schrager, J. Gichoya, I. Banarjee, H. Trivedi (2021). Machine Learning Methods to Predict Survival in Patients Following Traumatic Aortic Injury. *medRxiv*. [paper](#)

## PRESENTATIONS

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**A. ElHabr**, T. Ayer, C. Zhang (2021). Outcome-based Pharmaceutical Contracting with Heterogenous Patient Groups. *INFORMS Annual Meeting* (Invited Session) Anaheim, CA.

**A. ElHabr**, T. Ayer, J. Newsome, N. Kokabi, R. Smith, J. Gichoya (2021). Effect of Imaging Prior to Endovascular Intervention on the Mortality Rate of Emergency Pelvic Trauma Patients. *INFORMS Healthcare Conference* (Session Co-organizer) Virtual.

**A. ElHabr**, T. Ayer, C. Zhang (2019). Outcomes-Based vs. Traditional Pharmaceutical Contracts. *INFORMS Annual Meeting* (Invited Session) Seattle, WA.

**A. ElHabr**, T. Ayer, C. Zhang (2019). Outcomes-Based vs. Traditional Pharmaceutical Contracts. *POMS Annual Conference* (Invited Session) Washington, DC.

## OTHER RESEARCH EXPERIENCE

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**The Feinstein Institute for Medical Research (Northwell Health)** Jun 2019 - Sep 2020  
*Visiting Scholar* Manhasset, NY

- Used machine learning with local clinical data of acute stroke patients to predict stroke outcomes.

**Project - Analysis of Continuous Electroencephalography (cEEG) Data from Epilepsy Patients in an ICU** Sep 2017 - July 2018  
*Graduate Research Assistant* Atlanta, GA

- Implemented a random forest-based approach to classify the brain patterns of epilepsy patients over extended periods of time to aid in treatment decisions.

## PROFESSIONAL EXPERIENCE

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**Applied Research Laboratories** Jun 2015 - Aug 2015  
*Honors Scholar* Austin, TX

- Implemented an artificial neural network in Python to classify gun shots using audio captured by the microphone of a Raspberry Pi.

**Statoil (US Onshore - Marcellus)** May 2014 - Aug 2014  
*Facilities Engineering Intern* Houston, TX

- Built models in MATLAB/Excel to calculate frictional pressure drop to recommend pipes sizes for liquid gathering systems.

## TEACHING & LEADERSHIP EXPERIENCE

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**MSCR 598 Big Data to Knowledge (Emory)** Aug 2020 - Oct 2020; Aug 2021 - Oct 2021  
*Teaching Assistant* Atlanta, GA

- Developed hands-on machine learning modeling tutorial in R intended for clinical researchers with minimal exposure to programming.

**Georgia Tech INFORMS Student Chapter** May 2019 - May 2022  
*President (2019 - 2020); Social Media Chair (2020 - 2022)* Atlanta, GA

- 2021 INFORMS Student Chapter Annual Award - Magna Cum Laude
- 2020 INFORMS Student Chapter Annual Award - Cum Laude

**ISyE 6501 Introduction to Analytical Modeling**

May 2017 - Dec 2018

*Teaching Assistant**Atlanta, GA*

- Held weekly office hours online and led programming recitations over topics such as support vector machines,  $k$ -nearest neighbors classification,  $k$ -means clustering, time series modeling, regression, and tree-based models in R.
- Served as head TA in the Fall 2018 semester, overseeing and training 11 other TAs and working as primary conduit between a class of approximately 400 students and professor.
- 2020 AECT Division of Distance Learning Crystal Award - Third Place

**ISyE 3232 Stochastic Manufacturing & Service Systems**

Aug 2016 - May 2017

*Teaching Assistant**Atlanta, GA*

- Held weekly office hours and graded homeworks/projects in a timely manner.
- Received a 4.7/5.0 average rating from anonymous student evaluations.

**Equal Opportunity in Engineering Program (EOE)**

Aug 2015 - May 2016

*Peer Mentor**Austin, TX*

- Mentored a group of 20 first-year minority engineering students.
- Directed weekly seminars to help students become successful socially and academically at UT Austin.

**COMPUTING SKILLS**

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**Languages**

R (advanced); SQL, SAS, MATLAB, Python, VBA (intermediate)

**Engineering Software**

Arena, Simio, SolidWorks, LabVIEW

**Notable Data Experience**[Optum Clininformatics Data Mart](#), [IBM MarketScan](#),  
[HCUP National Inpatient Sample](#), [National Trauma Data Bank](#)**HONORS & AWARDS**

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Recipient, INFORMS Judith Liebman Award	2021
Recipient, The George Family Foundation Fellowship	2019
Recipient, The Goizueta Foundation Fellowship	2016-2018
Inductee, UT Austin EOE Academic Leaders Hall of Fame	2016
Member, UT Engineering Honors Program	2012-2016
Recipient, Virginia & Ernest Cockrell, Jr. Scholarship in Engineering	2012-2016