ANDREW K. ELHABR

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EDUCATION

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*: 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

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

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

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

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

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

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

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

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