Connor Forsythe, Ph.D.

(405) 830-5706 LinkedIn connorforsythe@cmu.edu crforsythe.github.io

Data and research scientist with 5+ years of experience. Expert in discrete-choice modeling, causal inference, and demand estimation. Skilled in integrating economic theories with machine learning. Committed to data-driven insights and innovations in interdisciplinary research and development.

KEY SKILLS

- Research
  - Policy analysis
  - Econometrics
  - Consumer behavior
  - Optimization
  - Machine learning
- Technical
  - Python, R, Stata, MATLAB, Julia, SQL, LaTeX
  - Keras, sklearn, NumPy, Pandas
- Data Collection
  - Survey design, deployment
  - Data cleaning
- Project Management
  - Proposal writing
  - Project coordination
  - Stakeholder engagement

EDUCATION

Ph.D. Mechanical Engineering
August 2023
Carnegie Mellon University
QPA: 3.8/4.0

B.S. Systems Engineering
May 2018
The George Washington University
GPA: 3.97/4.0, Top of Class

REFERENCES

Jeremy J. Michalek, Ph.D.
Professor of Mechanical Engineering, Engineering & Public Policy
Carnegie Mellon University
jmichalek@cmu.edu
(412) 268-3765

Kate S. Whitefoot, Ph.D.
Associate Professor of Mechanical Engineering, Engineering & Public Policy
Carnegie Mellon University
kwhitefoot@cmu.edu
(412) 268-6771

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher (Aug 2023 – Present)
Engineering and Public Policy; Carnegie Mellon University, Pittsburgh, PA

- **Project Management:** Proposing, designing, and executing research projects with fellow researchers.
- **Interdisciplinary Collaboration:** Promoting interdisciplinary collaboration across economics, business, and engineering.
- **Research Communication:** Authoring nine research articles, preparing proposals, and presenting at professional conferences
- **Mentoring:** Advising four students in econometrics, coding, and research design and communication.

RESEARCH PROJECTS AND EXPERIENCE

Develop novel models of consumer demand with machine learning

Method: Developed novel model integrating economic theories with machine learning.
Finding: Outperformed standard models with a Keras-implemented algorithm.
Takeaway: Model can improve future policy analyses and product design.

Model demand for new technologies – Electric Vehicles (EVs)

Method: Designed experiments and estimated discrete-choice models for mainstream EV demand.
Finding: Several modern and future EVs have and will be competitive with their gasoline counterparts.
Takeaway: Technology has influenced EV demand more so than changes in consumer preferences.

Model the causal link between vehicle registration and usage

Method: Used state safety inspections to causally identify vehicle registration impact on utilization.
Finding: Demonstrated vehicle use did not increase 1:1 with registrations.
Takeaway: Findings could reduce estimated statewide vehicle safety inspection policy costs by $90M annually.

Optimization of vehicle parking schedules

Method: Constructed model of city parking system as mixed-integer linear program.
Finding: Realistic reserved parking systems operated less efficiently than status-quo.
Takeaway: Reserved parking technologies should not be leveraged by cities seeking to minimize parking inefficiencies.