

# ABDOLLAH FARHOODI

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## EDUCATION

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<b>University of Illinois at Urbana-Champaign</b> Ph.D. Economics Committee: Dan Bernhardt (Chair), David Albouy, Jorge Lemus, George Deltas, Guillermo Marshall	<i>2014— May 2020 (Expected)</i>
<b>Sharif University of Technology, Iran</b> M.Sc. Economics	<i>2012</i>
<b>University of Tehran, Iran</b> B.Sc. Electrical Engineering (Control)	<i>2009</i>

## RESEARCH INTERESTS

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Industrial Organization, Urban Economics, Causal Machine Learning

## JOB MARKET PAPER

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### **Welfare Estimation in Peer-to-Peer Markets with Heterogeneous Agents: the Case of Airbnb**

Advisor: Dan Bernhardt

*Abstract:* Peer-to-peer (P2P) markets allow small suppliers with limited capital to enter markets that were traditionally occupied by large firms. This feature provides a potential decentralized distribution of opportunities. To investigate the distribution of welfare and opportunities among agents, I study the Airbnb short-term rental market, as a successful P2P marketplace. I use daily panel data of Airbnb rentals in Chicago from August 2014 through April 2017 and apply an individual-level multinomial logit model to estimate the distribution of consumer and producer surpluses across differentiated agents and over time. I show that properties in less advantaged neighborhoods benefit the least from having access to the Airbnb market, even though these properties feature weaker competitive pressure and lower opportunity costs of renting. My results show a disproportionate concentration of welfare in neighborhoods with higher incomes and house prices. I also show evidence of a higher surplus for low-income property owners, especially for those who live in high-demand areas.

## WORKING PAPERS

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### **Introducing a Micro-founded Index of Consumption Welfare: A Big Data Approach**

- Applied machine learning to introduce a novel index of consumption welfare
- Estimation by using Living Standard Measurement Survey

### **Evaluating Regulations in Peer-to-Peer Markets: A Synthetic Control Approach to Study Santa Monica Ban on Airbnb** (with Peter Christensen)

- Applied “Elastic Net Synthetic Control Method” to study multiple outcomes
- Event study on the effect of a ban on Airbnb

## RELEVANT EXPERIENCE

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### International Monetary Fund

- Fund Internship Program *Summer–2018*
- Applied machine learning to introduce a novel index of consumption welfare

### University of Illinois

- Research Assistant to Dan Bernhardt, Yufeng Wu, and Jorge Lemus *2015–2018*
- Big-Data in Environmental Economics and Policy Research Group *2018–current*
  - Collaborating with the National Center for Super-computing Applications

## TEACHING EXPERIENCE

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### Instructor:

Applied Machine Learning in Economics

University of Illinois  
*Spring 2019 – current*

Topics: Statistical Learning with R, Shrinkage Methods, Random Forest, Bagging, Boosting, SVM, Neural Networks, Causal Inference with ML

Outstanding rating (top 5 percent) in the “List of Teachers Ranked as Excellent by their Students”

### Teaching Assistant: (Undergraduate-Level)

Introduction to Microeconomics

Intermediate Microeconomics

University of Illinois

2016–2018

2014–2015

### Teaching Assistant: (Graduate-Level)

Game Theory

Econometrics I

Microeconomics II

Sharif University of Technology, Iran

2012

2010, 2011

2010

## SOFTWARE AND SKILLS

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R, Python, MATLAB, STATA, SQL, Mathematica, HTML, GitHub, Microsoft Office, Excel, L<sup>A</sup>T<sub>E</sub>X

Causal ML: Double ML, Elastic Net Synthetic Control, Generalized Random Forest, Deep-IV

## FELLOWSHIP AND AWARDS

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Robert Willis Harbeson Memorial Dissertation Award May 2019

University of Illinois Summer Research Fellowship Summer 2018

University of Illinois Summer Research Fellowship Summer 2015

University of Illinois Economics Department Fellowship Fall, Spring 2014

Awarded in the “List of Teachers Ranked as Excellent by their Students” 2016–2019 (6 Semesters)

University of Illinois Graduate Teaching Certificate May 2019

Ranked 3<sup>rd</sup> in the nationwide entrance exam to Economics graduate schools Iran, 2009

## REFERENCES

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Please contact Patricia Rosario at ECON-PhDJobs@illinois.edu to request the letters of recommendations

**Dan Bernhardt**

University of Illinois

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**David Albouy**

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**Jorge Lemus**

University of Illinois

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### **Introducing a Micro-Founded Index of Consumption Welfare: A Big Data Approach**

In this paper, I explore the heterogeneity in welfare from consumption based on a novel micro-founded index of welfare. I use Albania's 2012 Living Standard Measurement Survey to estimate the index in two steps. In the first step, I apply machine learning to find a non-parametric relation between households' consumption, and a large set of living conditions and characteristics indicators. In the second step, using the first step estimations, I find the distribution of households' marginal willingness to pay for each living condition's indicator, and estimate an index of welfare based on the model by Bajari and Benkard (2005). I show that the index is highly correlated with households' consumption expenditures, but unlike consumption as a naive measure of welfare, it accounts for the existing heterogeneity among their living conditions and preferences. Finally, this paper studies the geographical, cross gender and age distributions of the welfare index and compares the estimations with the consumption expenditure as a naive measure of welfare.

### **Evaluating Regulations in Peer-to-Peer Markets: A Synthetic Control Approach to Study Santa Monica Ban on Airbnb** (with Peter Christensen)

Together with Peter Christensen, I focus on the effect of a ban on Airbnb in Santa Monica as a natural experiment. I apply "elastic net synthetic control" as a recently developed causal machine learning method. Synthetic control method provides a framework to generate a treatment group for each potential outcome using a pool of control groups, and study multiple outcomes in the market. I study the effect of the ban that targets entire-home, Airbnb rentals on incumbent listings' revenue, pricing behavior, and local competition in the market. I show that the ban significantly dropped the number of entry and increases the market power of those who remained in the market. Studying welfare effect of the ban is the next step in this paper.