JONATHAN HERSH

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Argyros School of Business
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CURRENT POSITION

Chapman University, *Argyros School of Business* Assistant Professor, Economics and Management Science   2017-

PRIOR POSITIONS

MIT, *Department of Political Science*
Visiting Lecturer   Fall, 2016

Wellesley College, *Department of Economics*
Visiting Lecturer   Spring, 2015

EDUCATION

Ph.D., Economics, Boston University   2017

M.Sc., Management and Applied Economics, Wharton, University of Pennsylvania   2011

M.Sc., Economics, Barcelona Graduate School of Economics   2008

A.B., Economics, University of Chicago   2005

RESEARCH INTERESTS

Economics of Information Systems, Online Media Strategy and Piracy, Digital Platform Strategy, Development Economics, Applied Deep Learning, Machine Learning and Predictive Modeling

PUBLICATIONS

Brett Danaher, Jonathan Hersh, Michael Smith, and Rahul Telang, "The Effect of Piracy Website Blocking on Consumer Behavior", *forthcoming*, **MIS Quarterly** [link]

Matthew Harding and Jonathan Hersh. Big Data in Economics (2018), **IZA World of Labor**

Brian Bettenhausen, Eric Hanss, Jonathan Hersh, and Carlos Villarreal. Historical Health Conditions in Major US Cities: The HUE Data Set **Historical Methods**, (2014) 47: 67-80.

PUBLICATIONS UNDER REVIEW

The Paradox of Openness: Exposure vs. Efficiency of APIs, with Seth Benzell, Guillermo Lagarda Cuervas, and Marshall Van Alstyne *Under review at Management Science*

Bree Lang, Matt Lang, and Jonathan Hersh. (2018), Car Accidents and 3G Coverage: An Application of Machine Learning, *Under review at Jounral of Human Resources*

Ryan Engstrom, Jonathan Hersh, and David Newhouse. Poverty from Space: Using High Resolution Satellite Imagery for Estimating Economic Well-being, *Revisions requested at World Bank Economic Review*

Jonathan Hersh and Hans-Joachim Voth. (2018). Sweet Diversity: Overseas Trade and Gains from Variety after 1492. *Revisions requested at Explorations in Economic History*

WORK IN PROGRESS

Mapping Socio-Economic Welfare Indicators in Belize Using Satellites and Machine Learning, with Ryan Engstrom and Mike Mann

Delay Forecasts in Infrastructure Projects and Managerial Decisions

The MegafilmesHD Shutdown in Brazil and itsEffect on Piracy and Media Consumption, with Brett Danaher and Mike D. Smith

Analyzing Conflict From Space: Identification of Physical Destruction During the Syrian Civil War with Artificial Intelligence, with Andre Groger, Andrea Matranga and Hannes Mueller [latest slides]

Combining Deep Learning With Surveys to Generate Better Poverty Maps, with an application to Mexico, with Boris Babenko, David Newhouse, Anusha Ramakrishnan, and Tom Swartz [latest slides]

PEER-REVIEWED CONFERENCE PUBLICATIONS

(2) Boris Babenko, Jonathan Hersh, David Newhouse, Anusha Ramakrishnan, and Tom Swartz. Poverty Mapping Using Convolutional Neural Networks Trained on High and Medium Resolution Satellite Images, With an Application in Mexico, Neural Information Processing Systems (NIPS 2017)

(1) Engstrom, R., Newhouse, D., Haldavanekar, V., Copenhaver, A., & Hersh, J. (2017, March). Evaluating the Relationship Between Spatial and Spectral Features Derived from High Spatial Resolution Satellite Data and Urban Poverty in Colombo, Sri Lanka. In Urban Remote Sensing Event (JURSE), 2017 Joint (pp. 1-4). IEEE.

INVITED SEMINAR PRESENTATIONS

2019: Federal Communications Commission (FCC, *scheduled*)

2018: Princeton University (Empirical Studies of Conflict)

2017: UC Riverside; Penn State; University of Southern California; Princeton University (Empirical Studies of Conflict)

2016: Chapman University (Argyros School of Business); World Bank (Development Economics Group)

INVITED CONFERENCE PRESENTATIONS

2019: American Economic Association Annual Meeting

2018: DC R Conference; INFORMS International; Statistical Challenges in E-Commerce Research 2018; Empirical Studies of Conflict; New York R Conference; 11th Digital Economics Conference (Toulouse School of Economics); Artificial Intelligence for Development (CEGA/World Bank); Pacific Development Conference (UC Davis)

2017: Geospatial Analysis for International Development (CEGA/Berkeley); UN Development Program (Human Development Report Office); World Bank (POV Summer University); Princeton University (Empirical Studies of Conflict); Prediction for Prevention of Armed Conflict (Barcelona, Spain)

2016: Computational and Financial Econometrics (Seville, Spain); Annual Bank Conference on Development Economics (World Bank); Center for the Study of African Economies: Economic Development in Africa (Oxford); Eastern Economic Association; Kiel Institute (Firms in International Trade Summer School)

TEACHING

Chapman University

Fall 2019: Special Topics in Business (Machine Learning for Managers) [Syllabus]

Fall 2019: Statistical Models in Business Analytics (Introduction to Machine Learning) (x2) [Syllabus]

Fall 2018: Statistical Models in Business Analytics (x2) [Syllabus] [Instructor rating: 4.27/5]

Fall 2018: Development Economics [Syllabus] [Instructor rating: 4.45/5]

Spring 2018: Machine Learning Applications in Business [Syllabus] [Instructor rating: 5/5]

Spring 2018: Development Economics [Syllabus] [Instructor rating: 3.81/5]

Fall 2018: Introduction to Business Analytics [Syllabus] [Instructor rating: 4.21/5]

MIT

Fall 2017: Quantitative Research Methods III (Political Science PhD quantitative sequence) [Syllabus]

World Bank, Summer University

Summer 2018: Introduction to Machine Learning [Syllabus] [Instructor rating: 6.07/7]

Summer 2017: Introduction to Machine Learning [Instructor rating: 6.64/7]

Summer 2016: Introduction to Machine Learning

Wellesley College

Spring 2016: Development Economics [Syllabus] [92.8% course recommend/strongly recommend/neutral]

Spring 2016: Introductory Microeconomics [Syllabus] [95.2% course recommend/strongly recommend/neutral]

PROFESSIONAL SERVICE

Referee: *Management Science, Review of Economic Studies, World Bank Economic Review, Journal of Business Analytics*

Panel Organizer: Pacific Development Conference 2018

Instructor's Manual Author: *R for Eveyrone: Advanced Analytics and Graphics* (Addison Wesley) [link1] [link2]

Discussant: 11th Digital Economics Conference (Toulouse School of Economics) [slides]; Pacific Development Conference (UC Davis) [slides]

DEPARTMENT AND UNIVERSITY SERVICE

Committee Member: Graduate and MBA Academic Committee	2018-19, 2019-20
Reviewer: Kay Family Foundation Data Analytics Grant	2018
Judge: American Statistical Association Southern California DataFest	2018, 2019

FELLOWSHIPS AND AWARDS

Chapman University Faculty Opportunity Fund "Spotting Violence from Space: The Detection of Housing Destruction in Syria" ($13,460)	2019
La Caixa Research Grant on Socioeconomic Well-being ($20,000)	2017
Hariri Institute for Computational Science Graduate Fellowship	2016
Big Data Innovation Challenge Award, World Bank Group ($104,000)	2014
Teaching Fellowship, Boston University	2013-2014

PREVIOUS POSITIONS

Consultant, World Bank Group, Poverty Global Practice	2014-2016
Research Manager, University of Chicago Center for Population Economics	2011-2012
Research Professional (RA Emily Oster), University of Chicago Booth School of Business	2008-2009
Economist, RCF Economic and Financial Consulting	2006-2008
Systems Analyst and Developer, McMcaster-Carr Supply Company	2005-2006

INDUSTRY ADVISING

Introduction to Machine Learning, Statistical Institute of Belize, 2019 link
DoubleCheck Solutions (*Member, Analytics Advisory Board*)
Lander Analytics
Arconic (*Introduction to Deep Learning Mini-Course*) [Syllabus]
World Bank
Inter-American Development Bank

OTHER PUBLIC TALKS

[How to Start a Data Science Insurrection at an Organization that Would Prefer You Not], [DC R Conference], November 9, 2018

Applications of Machine Learning to Development Economics Research, June 8, 2018 [slides]

"[Applying Deep Learning to Satellite Images to Estimate Violence in Syria and Poverty in Mexico]", [New York R Conference], April 21, 2018

SOFTWARE

Rlasso A Stata wrapper that allows for estimation of glmnet models within Stata. Performs regularization and best subset selection using the R glmnet package for Lasso, Ridge and Elastic Net regression from within Stata. [code] [help file] [desc]

CODING

R, Stata, Python, C++, SQL, Keras

REFERENCES

Marshall Van Alstyne	Michael D Smith	Sam Bazzi
Boston University	Carnegie Mellon	Boston University
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