

Chapman University
Argyros School of Business
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CURRENT POSITION

Chapman University, *Argyros School of Business*
Assistant Professor, Economics and Management Science 2017-Present
Academic Director, Data Analytics Accelerator 2020-Present

PRIOR POSITIONS

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

Wellesley College, *Department of Economics*
Visiting Lecturer Spring, 2016

EDUCATION

Ph.D., Economics, Boston University 2012-2017
M.Sc., Management and Applied Economics, Wharton, University of Pennsylvania 2009-2011
M.Sc., Economics, Barcelona Graduate School of Economics 2007-2008
A.B., Economics, University of Chicago 2001-2005
University of Kansas, Coursework in Computer Science and Mathematics 2000

RESEARCH INTERESTS

Economics of Information Systems, IT for Development, Economics of Digitization, Online Media Piracy, IT Strategy, Applied Deep Learning, Machine Learning and Predictive Modeling

PEER-REVIEWED PUBLICATIONS

- (10) Seth Benzell, Jonathan Hersh, & Marshall Van Alstyne. (2022). [How APIs Create Growth by Inverting the Firm](#), *Accepted, Management Science*
- (9) Shima Nabiee, Matthew Harding, Jonathan Hersh, and Nader Bagherzadeh. (2022) [Hybrid U-Net: Semantic segmentation of high-resolution satellite images to detect war destruction](#). **Machine Learning with Applications**, 9, 100381.
- (8) Jonathan Hersh and Joachim Voth. (2022) [Sweet Diversity: Overseas Trade and Gains from Variety after 1492](#). **Explorations in Economic History**, 101468.
- (7) Jonathan Hersh, Bree Lang, & Matthew Lang. (2022) [Car accidents, smartphone adoption and 3G coverage](#). **Journal of Economic Behavior & Organization**, 196, 278-293.
- (6) Ryan Engstrom, Jonathan Hersh, & David Newhouse. (2021). [Poverty from Space: Using High Resolution Satellite Imagery for Estimating Economic Well-being](#), **The World Bank Economic Review**; lhabo15, <https://doi.org/10.1093/wber/lhabo15>
- (5) Hannes Mueller, Andre Groger, Jonathan Hersh, Andrea Matranga, & Joan Serrat. (2021). [Analyzing Conflict From Space: Identification of Physical Destruction During the Syrian Civil War with Artificial Intelligence](#) **Proceedings of the National Academy of Sciences**, June 8, 2021 118 (23) e2025400118; <https://doi.org/10.1073/pnas.2025400118>

- (4) Jonathan Hersh, Ryan Engstrom, & Michael Mann, (2020). [Open data for algorithms: mapping poverty in Belize using open satellite derived features and machine learning](#). **Information Technology for Development**, 1-30.
- (3) Brett Danaher, Jonathan Hersh, Michael D. Smith, & Rahul Telang R. (2020). [The Effect of Piracy Website Blocking on Consumer Behavior](#) **MIS Quarterly**, 44:2
- (2) Matthew Harding & Jonathan Hersh. (2018). [Big Data in Economics](#) **IZA World of Labor**
- (1) Brian Bettenhausen, Eric Hanss, Jonathan Hersh, & Carlos Villarreal. (2014). [Historical Health Conditions in Major US Cities: The HUE Data Set](#) **Historical Methods**, 47: 67-80.

SUBMITTED PAPERS

- Brett Danaher & Jonathan Hersh. (2020). [Whom Should Anti-piracy Enforcement Actions Target? Evidence from the MegafilmesHD Shutdown in Brazil](#)
- *Revising draft in preparation for submission*

WORK IN PROGRESS

- Selina Carter & Jonathan Hersh. (2022). Will AI Accelerate the Intra-Firm Digital Divide? Evidence from a Field Experiment on How Managers use Explainable AI
- *Revising draft in preparation for submission*

- Luis Alberro, Joshua Anderson, Jonathan Hersh, Tina George, and Kushal Kumar Reddy. (2022). Delivering Public Services in Data-Scarce Environments: Using Open Data to Solve the Facility-Location Problem at Scale
- Submission requested at *American Economic Association, Papers and Proceedings*

- Seth Benzell, Jonathan Hersh, and Marshall Van Alstyne. Do Startups Invert? API Networks and Startup Exits

CONFERENCE PUBLICATIONS

- (2) Boris Babenko, Jonathan Hersh, David Newhouse, Anusha Ramakrishnan, & Thomas Swartz. [Poverty Mapping Using Convolutional Neural Networks Trained on High and Medium Resolution Satellite Images, With an Application in Mexico](#), Neural Information Processing Systems Workshop on Machine Learning for the Developing World (NeurIPS 2017)
- (1) Ryan Engstrom, David Newhouse, Vishwesh Haldavanekar, Andrew Copenhaver, & Jonathan Hersh. (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.

POLICY REPORTS AND BOOK CHAPTERS

- (2) Jonathan Hersh, Lucia Martin Rivero, & Janelle Leslie. (May, 2021). [Where are the unbanked in Belize? Using Machine Learning small area estimation to improve Financial Inclusion geographic targeting](#) Inter-American Development Bank Monograph, May 2021 <http://dx.doi.org/10.18235/0003381>
- (1) Jonathan Hersh, Ryan Engstrom, Michael Mann, Alejandra Mejia, & Lucia Martin Rivero. (May, 2020). [Mapping Income Poverty in Belize Using satellite Features and Machine Learning](#) Inter-American Development Bank Monograph, May 2020 <http://dx.doi.org/10.18235/0002345>

CONFERENCE AND SEMINAR PRESENTATIONS

- Will AI Accelerate the Intra-Firm Digital Divide? Evidence from a Field Experiment on How Managers use Explainable AI*

- Statistical Challenges in E-Commerce Research (6/2022)
- UC Riverside, Department of Economics (4/2022)
- USC Marshall School of Business, Management & Organization (9/2021)
- Global Conference on Innovations in Management and Business (2021)
- INFORMS Conference on Information Systems & Technology (CIST) (2020)

*Delivering Public Services in Data-Scarce Environments: Using Open Data to Solve the Facility-Location Problem at Scale **

- [World Bank](#) (5/2022)
- American Economic Association Annual Meeting 2023 (scheduled)

How APIs Create Growth by Inverting the Firm

- *Columbia/Wharton Management, Analytics And Data Conference (2022)
- Statistical Challenges in E-Commerce Research (2018)
- API Days Global New York (7/2022)

Digitally Distracted at the Wheel: Myopic Smartphone Use and Car Accidents

- Anahuac University, Mexico (2/2020)
- Federal Communications Commission (9/2019)
- *American Economic Association Annual Meeting (1/2019)
- *UC Riverside (2018)

Whom Should Antipiracy Enforcement Actions Target? Evidence from the MegafilmesHD Shutdown in Brazil

- *Statistical Challenges in E-Commerce Research (2019)

Analyzing Conflict From Space: Identification of Physical Destruction During the Syrian Civil War with Artificial Intelligence

- *Berkeley (2020)
- *ENS Lyon (2019)
- *Trinity College (2019)
- *Uppsala ViEWS (2019)
- INFORMS International (2018)
- Empirical Studies of Conflict Annual Meeting (2018)
- Artificial Intelligence for Development (CEGA/World Bank) (2018)
- Princeton University, Empirical Studies of Conflict (3/2018)

Combining Deep Learning With Surveys to Generate Better Poverty Maps, with an application to Mexico

- Pacific Development Conference (2018)

Poverty from Space: Using High Resolution Satellite Imagery for Estimating Economic Well-being

- UC Riverside (11/2017)
- Penn State (10/2017)
- University of Southern California (9/2017)
- UN Development Program, Human Development Report Office (7/2017)
- Princeton University, Empirical Studies of Conflict (7/2017)
- Chapman University, Argyros School of Business (12/2016)
- World Bank, Development Economics Group (1/2017)
- Geospatial Analysis for International Development, CEGA/Berkeley, (2017)
- Prediction for Prevention of Armed Conflict, Barcelona, Spain (2017)
- World Bank Annual Bank Conference on Development Economics (2016)

Unintended Consequences of the African Growth and Opportunity Act: The Role of Trade Diversion and Structural Change

- Computational and Financial Econometrics (2016)
- Center for the Study of African Economies: Economic Development in Africa (2016)

- Eastern Economic Association (2016)

* Denote presentation by co-author

TEACHING

Chapman University

MGSC 310: Statistical Models in Business Analytics (Introduction to Machine Learning) [\[Syllabus\]](#)

- Fall 2021 (x2) *[Instructor rating: 4.1/5]*
- Fall 2020 (x2) *[Instructor rating: 4.27/5]*
- Fall 2019 (x2) *[Instructor rating: 4.32/5]*

BUS 696: Special Topics in Business (Machine Learning for Managers) [\[Syllabus\]](#)

- Fall 2021 *[Instructor rating: 4.88/5]*
- Fall 2020 *[Instructor rating: 4.49/5]*
- Fall 2019 *[Instructor rating: 3.49/5]*

ECON 441: Development Economics

- Fall 2018 *[Instructor rating: 4.45/5]* [\[Syllabus\]](#)
- Spring 2018 *[Instructor rating: 3.81/5]*

MGSC 207: Introduction to Business Analytics

- Fall 2017 *[Instructor rating: 4.21/5]* [\[Syllabus\]](#)

Anahuac University, Mexico City

Introduction to Machine Learning

- Winter 2020 [\[Syllabus\]](#)

MIT

Quantitative Research Methods III (Political Science PhD quantitative sequence)

- Fall 2017 [\[Syllabus\]](#)

Wellesley College

Development Economics

- Spring 2016, [\[Syllabus\]](#) [92.8% course recommend/strongly recommend/neutral]

Introductory Microeconomics

- Spring 2016 (x2) [\[Syllabus\]](#) [95.2% course recommend/strongly recommend/neutral]

World Bank

Introduction to Machine Learning

- Winter 2019, *[Instructor rating: 6.23/7]*
- Summer 2018, *[Instructor rating: 6.07/7]*
- Summer 2017, *[Instructor rating: 6.64/7]*
- Summer 2016

PROFESSIONAL SERVICE

Ad Hoc Referee: *Information Systems Research, MIS Quarterly, Management Science, Review of Economic Studies, World Bank Economic Review, Journal of Business Analytics, Economic Inquiry, PLOS ONE, Social Sciences & Humanities Open, ICIS 2020, ICIS 2021*

Editorial Board: *Journal of Business Analytics*

Program Committee: ACM (Association for Computing Machinery) Conference on Computing and Sustainable Societies (ACM COMPASS 2020), 2020, 2021

Panel Organizer: Inter-American Development Bank (Big Data for Migration) 2019; Pacific Development Conference 2018

Instructor’s Manual Author: *R for Everyone: 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

2021-2022

- Academic Director, Data Analytics Accelerator
- Academic Adviser, Data Analytics Association student club

2020-2021

- Management Science hiring committee
- Academic Director, Data Analytics Accelerator
- Academic Adviser, Data Analytics Association student club

2019-2020

- Management Science hiring committee
- Reviewer, Faculty Opportunity Fund University Grant
- Academic Adviser, Data Analytics Association student club
- Center for UG Excellence UG Scholarly/Creative Grant Reviewer

2018-2019

- Graduate and MBA Academic Committee Member
- Judge, American Statistical Association Southern California DataFest
- Management Science hiring committee
- Judge, Panther Cage Match, Leatherby Center for Entrepreneurship and Business Ethics

2017-2018

- Management Science hiring committee
- Reviewer, Kay Family Foundation Data Analytics Grant
- Graduate and MBA Academic Committee Member
- Judge, American Statistical Association Southern California DataFest

FELLOWSHIPS AND AWARDS

Faculty Career Champion Nominee, 2021
 Kay Family Foundation Data Analytics Grant, “Towards Responsive Social Safety Nets: Openly Derived Indicators as Proxies for Subnational Multi-Dimensional Vulnerability in Africa” (\$93,150) 2020-2022
 Chapman University Faculty Opportunity Fund (\$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
 Dean’s List, University of Chicago

INDUSTRY POSITIONS

Principal Machine Learning Scientist, WorkHelix 2022-
 Consultant, Inter-American Development Bank, Data Science 2019-21
 Consultant, World Bank Group, Data Science 2014-2016; 2018-20

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, McMaster-Carr Supply Company	2005-2006

INDUSTRY ADVISING

Advisory Board, AmplifAir
Advisor, [DoubleCheck Solutions](#)
Advisor, [Lander Analytics](#)
[Introduction to Machine Learning](#), Central Bank of Belize, 2020
[Introduction to Machine Learning](#), Statistical Institute of Belize, 2019
[Introduction to Deep Learning](#), Arconic 2018

OTHER PUBLIC TALKS

[Why Is It So Hard to Scale Development Data Projects? Answer: Build a Data Lake First](#), Private Sector Development Research Network Workshop on Firm level Data, April 6, 2021
[Get Your Hands Dirty: You Should Model with Unstructured Data](#), University of Michigan, School of Information guest lecture, March 30, 2021
[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, PyTorch, TensorFlow, AWS stuff

REFERENCES

Marshall Van Alstyne Boston University Phone: (617) 358-3571 mva@bu.edu	Michael D Smith Carnegie Mellon Phone: (412) 268-5978 mds@cmu.edu	Sam Bazzi UCSD Phone: (617) 353-6150 sbazzi@ucsd.edu
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