

Chapman University
Argyros School of Business
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CURRENT POSITION

Chapman University, Argyros School of Business

Associate Professor (with tenure), Economics and Management Science	2024-
Assistant Professor, Economics and Management Science	2017-2024
Academic Director, Data Analytics Accelerator	2020-2023

PREVIOUS POSITIONS

Principal Machine Learning Scientist, WorkHelix (VC Backed Seed Stage Startup)	2022-
Consultant, Inter-American Development Bank, Data Science	2019-21
Consultant, World Bank Group, Data Science	2014-2016; 2018-20
MIT, Visiting Lecturer (Graduate Statistics)	Fall, 2016
Wellesley College, Visiting Lecturer (Undergraduate Economics)	Spring, 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, McMaster-Carr Supply Company	2005-2006

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

Managerial Decisions Using Machine Learning, Online Media Piracy, Platform Economics, API and Technology Strategy, Applied Deep Learning, Machine Learning and Predictive Modeling

PUBLICATIONS

- (11) Seth Benzell, Jonathan Hersh, & Marshall Van Alstyne. (2022). [How APIs Create Growth by Inverting the Firm](#), *Forthcoming, Management Science*
- (10) 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.
- (9) Jonathan Hersh and Joachim Voth. (2022) [Sweet Diversity: Overseas Trade and Gains from Variety after 1492](#). *Explorations in Economic History*, 101468.
- (8) Jonathan Hersh, Bree Lang, & Matthew Lang. (2022) [Car accidents, smartphone adoption and 3G coverage](#). *Journal of Economic Behavior & Organization*, 196, 278-293.
- (7) 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>

- (6) 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>
- (5) 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.
- (4) Brett Danaher, Jonathan Hersh, Michael D. Smith, & Rahul Telang R. (2020). [The Effect of Piracy Website Blocking on Consumer Behavior](#) **MIS Quarterly**, 44:2
- (3) Matthew Harding & Jonathan Hersh. (2018). [Big Data in Economics](#) **IZA World of Labor**
- (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) 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.

WORKING PAPERS

- Selina Carter & Jonathan Hersh. (2022). [Explainable AI Helps Bridge the AI Skills Gap: Evidence from a Large Bank](#)
 - Preparation for submission
- Brett Danaher & Jonathan Hersh. (2020). [Whom Should Antipiracy Enforcement Actions Target? Evidence from the Mega filmes HD Shutdown in Brazil](#)
 - Preparation for submission

WORK IN PROGRESS

- 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](#)
- Seth Benzell, Jonathan Hersh, and Marshall Van Alstyne. [Do Startups Invert? API Networks and Startup Exits](#)
- Seth Benzell, Jonathan Hersh, and Marshall Van Alstyne. [Technology as Strategy](#)

CONFERENCE PUBLICATIONS

- (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

Explainable AI Helps Bridge the AI Skills Gap: Evidence from a Large Bank

- University of Pennsylvania, Wharton School of Business (4/12/2024)
- Stony Brook University, College of Business (2/13/2024)
- NOVA School of Economics (1/30/2024)
- American University, Kogod School of Business (11/30/2023)
- MIT Conference on Digital Experimentation (11/10/2023)
- INFORMS Annual, Human-Centered Machine Learning Session (10/17/2023)
- Wharton/Columbia Management, Analytics and Data MAD 2023 (5/19/2023)
- USC Artificial Intelligence in Management, AIM 2023 (3/16/2023)
- Erasmus University Rotterdam (3/14/2023)
- 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

- Notre Dame (11/15/2023)
- [World Bank](#) (5/2022)
- American Economic Association Annual Meeting 2023 (1/2023)

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)

Car accidents, smartphone adoption and 3G coverage

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

- Interterm 2024 *[Instructor rating: 5/5]*
- Fall 2022 (x2) *[Instructor rating: 4.6/5]*
- 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 659: Machine Learning for Managers [\[Syllabus\]](#)

- Spring 2023 *[Instructor rating: 4.38/5]*
- 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

2023-2024

- Graduate Academic Council Member

2022-2023

- Academic Director, Data Analytics Accelerator

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

Spanish Society of Statistics and Operations Research, BBVA Foundation Award, Best Contribution From Statistics and Operations Research Using Data Science and Big Data (6,000€ award), 2023
 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 ADVISING

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

[Learning From Unstructured Data in Business Research](#), USC SoCal Strategy and OT Workshop, April 7, 2023
[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, Pandas, AWS

REFERENCES

Marshall Van Alstyne Boston University	Michael D Smith Carnegie Mellon	Erik Brynjolfsson Stanford
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