

# Maria De-Arteaga

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CONTACT INFORMATION	Austin, TX	dearteaga@mcombs.utexas.edu mariadearteaga.com
CURRENT APPOINTMENT	<b>University of Texas at Austin</b> Austin, TX, USA <i>Assistant Professor</i> Information, Risk, and Operations Management Department McCombs School of Business	<b>July 2020 – Present</b>
EDUCATION	<b>Carnegie Mellon University</b> Pittsburgh, PA, USA <i>Ph.D., Machine Learning &amp; Public Policy</i> — Doctoral Dissertation: <i>Machine Learning in High-Stakes Settings: Risks and Opportunities</i> — Advisors: Alexandra Chouldechova & Artur Dubrawski	<b>Aug 2014 – May 2020</b>
	<b>Carnegie Mellon University</b> Pittsburgh, PA, USA <i>Master of Science, Machine Learning</i>	<b>Aug 2014 – May 2017</b>
	<b>Universidad Nacional de Colombia</b> Bogota, Colombia <i>Bachelor of Science, Mathematics</i>	<b>Aug 2008 – Aug 2013</b>
	<b>Universidad Autónoma de Madrid</b> Madrid, Spain <i>Exchange student</i>	<b>Jan 2012 – Dec 2012</b>
SELECTED PUBLICATIONS	<p><i>Note on authorship order: As faculty, I tend to follow Business School convention, which does not give special meaning to the last author and orders according to contribution. ° indicates student lead.</i></p> <p>Y. Li°, <b>M. De-Arteaga</b>, M. Saar-Tsechansky. <i>More Data Can Lead Us Astray: Active Data Acquisition in the Presence of Label Bias</i>. In Proceedings of the AAAI Conference on Human Computation and Crowdsourcing (HCOMP), 2022.</p> <p><b>M. De-Arteaga</b>, S. Feuerriegel, M. Saar-Tsechansky. <i>Algorithmic Fairness in Business Analytics: Directions for Research and Practice</i>. Production &amp; Operations Management, 2022.</p> <p>T. Neumann°, <b>M. De-Arteaga</b>, S. Fazelpour. <i>Justice in Misinformation Detection Systems: An Analysis of Algorithms, Stakeholders, and Potential Harms</i>, In Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAccT), 2022.</p> <p>S. Fazelpour, <b>M. De-Arteaga</b>. <i>Diversity in Sociotechnical Machine Learning Systems</i>. Big Data &amp; Society, 2022.</p> <p>V. Jeanselme°, <b>M. De-Arteaga</b>, J. Elmer, S. M. Perman, A. W. Dubrawski. <i>Sex differences in post cardiac arrest discharge locations</i>, Resuscitation Plus, 2021.</p> <p>R. Gao°, M. Saar-Tsechansky, <b>M. De-Arteaga</b>, M. Lease, M.K. Lee, L. Han. <i>Human-AI Collaboration with Bandit Feedback</i>, In Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2021.</p> <p>N. Akpınar°, <b>M. De-Arteaga</b>, A. Chouldechova. <i>The effect of differential victim crime reporting on predictive policing systems</i> In Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAccT), 2021.</p> <p><b>M. De-Arteaga*</b>, R. Fogliato*, and A. Chouldechova. <i>A case for humans-in-the-loop: decisions in the presence of erroneous algorithmic scores</i>. In Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI), 2020. (*Indicates equal contribution)</p> <p>R. Fogliato*, <b>M. De-Arteaga*</b>, and A. Chouldechova. <i>Lessons from the deployment of an algorithmic tool in child welfare</i>. Fair &amp; Responsible AI Workshop, CHI, 2020. (*Indicates equal contribution)</p>	

A. Romanov, **M. De-Arteaga**, H. Wallach, J. Chayes, C. Borgs, A. Chouldechova, S. Geyik, K. Kenthapadi, A. Rumshisky, A. Kalai, *Whats in a name? Reducing bias in bios without access to protected attributes*, In Proceedings of the Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2019. **Best Thematic Paper**.

**M. De-Arteaga**, A. Romanov, H. Wallach, J. Chayes, C. Borgs, A. Chouldechova, S. Geyik, K. Kenthapadi, A. Kalai, *Bias in Bios: A Case Study of Semantic Representation Bias in a High-Stakes Setting*, In Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAT\*), 2019.

N. Swinger\*, **M. De-Arteaga\***, N. Heffernan IV, M. Leiserson, A. Kalai, *What are the biases in my word embedding?*, In Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES), 2019. (\*Indicates equal contribution)

**M. De-Arteaga**, J. Chen, P. Huggins, J. Elmer, G. Clermont, A. Dubrawski, *Predicting Neurological Recovery with Canonical Autocorrelation Embeddings*, PLoS ONE, 2019.

**M. De-Arteaga**, A. Dubrawski, A. Chouldechova, *Learning under selective labels in the presence of expert consistency*, Workshop on Fairness, Accountability, and Transparency in Machine Learning (FAT/ML), ICML, 2018.

**M. De-Arteaga**, W. Herlands, D. Neill, A. Dubrawski, *Machine Learning for the Developing World*, ACM Transactions on Management Information Systems, 2018.

**M. De-Arteaga**, A. Dubrawski, *Discovery of Complex Anomalous Patterns of Sexual Violence in El Salvador*, Data for Policy, 2016. **1st Place Innovation Award on Data Science**.

W. Herlands, **M. De-Arteaga**, D. Neill, A. Dubrawski, *Lass0: Sparse Non-Convex Regression by Local Search*, Workshop on Optimization for Machine Learning, NIPS, 2015.

**M. De-Arteaga**, I. Eggel, C. Kahn, H. Müller, *Analyzing Image Search Behaviour of Radiologists: Semantics and Prediction of Query Results*, Journal of Digital Imaging, 2015.

**M. De-Arteaga**, I. Eggel, B. Do, D. Rubin, C. Kahn Jr. H. Müller, *Comparing Image Search Behaviour in the ARRS GoldMiner Search Engine and a Clinical PACS/RIS*, Journal of Biomedical Informatics, 2015.

#### GRANTS & FUNDING

**NIH R01: Optimizing Recovery Prediction After Cardiac Arrest.** \$3,156,222 USD, 2022.  
*Co-Principal Investigator* (PI: Jonathan Elmer).

**UT Austin Machine Learning Laboratory: Learning from Noisy and Biased Labelers towards Accuracy and Fairness goals.** \$50,000 USD, 2021.  
*Co-Principal Investigator* (with Maytal Saar-Tsechansky).

**UT Austin Good Systems Grant: Designing Responsible AI Technologies to Curb Disinformation.** \$810,000 USD, 2021-2027.  
*Senior Personnel* (PI: Matt Lease).

**Google Award for Inclusion Research: Who is Most Likely to Advocate for this Case? A Machine Learning Approach.** \$60,000 USD, 2020.  
*Principal Investigator*

**Microsoft Research Dissertation Grant: Quantifying and Mitigating Risks of Algorithmic Decision Support.** \$25,000 USD, 2018.  
*Principal Investigator*

#### AWARDS

- *Best Paper Runner-Up Award*, Workshop on Information Technologies and Systems, 2021.
- *EECS Rising Stars*, 2019.
- *Best Thematic Paper Award*, Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2019.
- *1st Place Innovation Award on Data Science*, Data for Policy, 2016.
- *Best Student Presentation Award*, Domestic Nuclear Detection Office (DNDO) Academic Research Initiative Grantees Conference, 2015.

- 2nd place *Premio ¡Investiga! 2019*, an award for Colombian investigative journalism.
- *Grado de Honor*, Universidad Nacional de Colombia, 2013.

WORK  
EXPERIENCE

<b>Early SAS</b> Bogota, Colombia	<b>Apr 2017 –</b>
<i>Co-founder &amp; CTO</i>	
Social entrepreneurship focused on data-driven investigative journalism in Colombia.	
<b>Microsoft Research</b> Cambridge, MA, USA	<b>May 2018 – Aug 2018</b>
<i>Research intern</i>	
<b>Microsoft Research</b> Redmond, WA, USA	<b>May 2017 – Aug 2017</b>
<i>Research intern</i>	
<b>Haute École Spcialise de Suisse Occidentale</b> Sierre, Switzerland	<b>Jun 2014 – Aug 2014</b>
<i>Research intern</i>	
<b>Quantil SAS</b> Bogota, Colombia	<b>Aug 2013 – Jun 2014</b>
<i>Junior researcher</i>	
<b>Connectas</b> Bogota, Colombia	<b>Mar 2012 – Jun 2012</b>
<i>Investigative journalist</i>	
<b>Publicaciones Semana - Especiales Regionales</b> Bogota, Colombia	<b>Aug 2010 – Dec 2011</b>
<i>Journalist</i>	

TEACHING  
EXPERIENCE

<b>University of Texas at Austin</b> Austin, TX, USA	<b>Spring'21, Fall'21, Fall'22</b>
<i>Instructor, MIS-304 Introduction to Programming and Problem Solving</i>	
<b>Universidad de los Andes</b> Bogota, Colombia	<b>Summer 2017</b>
<i>Visiting Instructor, Intelligent Systems Architectures</i>	
<b>Carnegie Mellon University</b> Pittsburgh, PA, United States	<b>Fall 2016</b>
<i>Teaching Assistant, Data Mining (95-791)</i>	
<b>Carnegie Mellon University</b> Pittsburgh, PA, United States	<b>Spring 2016</b>
<i>Teaching Assistant, Machine Learning (10-601)</i>	
<b>Colombian Mathematical Olympiad (OCM)</b> Bogota, Colombia	<b>Jan 2010 – Aug 2010</b>
<i>Instructor (number theory and combinatorics)</i>	

INVITED TALKS  
& PANELS

**2022**  
LMU Munich (Keynote Series, Research in AI and Management), MIT (Guest lecturer, Ethical ML in Human Deployments course), Computing Community Consortium AI/OR Workshop, Penn State (AI for Social Impact Seminar Series), UW Madison (Statistics Dept. Seminar), McCombs Alumni (Knowledge to go Webinar), University of Memphis (Cognitive Science Seminar), Sociedad Colombiana de Matemticas, Texas State University (Math & Stats Awareness Series), Women in Data Science (WIDS) Charlottesville, CHI TRAIT Workshop Panel, CRA Snowbird Conference (From Fairness to Responsibility Panel).

**2021**  
AI for People Conference (*Keynote*), Johns Hopkins University (MINDS & CIS Seminar Series), MSRI (Workshop on Mathematics and Racial Justice), University of Edinburgh (AI Ethics and Society seminar), University of Southern California (CAIS Symposium on Equity & AI), UT Austin (MLL & Good Systemsseminar series on Ethics in AI), California State University Long Beach (Mathematics and Statistics colloquium), Rice University (ECE Data Science Seminar), UT Austin (McCombs Knowledge to go Webinar).

## 2020

NeurIPS (ML Retrospectives Workshop), UMass Amherst (Machine Learning & Friends Seminar), MIT Lincoln Laboratory (*Keynote*, Hispanic Heritage Month), Facebook (*Keynote*, Responsible NLP Summit), WIDS Bogota (*Keynote*), Universidad Javeriana (*Keynote*, MSc Data Science Inaugural Event), INFORMS en Español, X4D Seminar Series, Universidad del Rosario (Tic Tank seminar), UT Austin Conference on the Ethics of AI, Australian National University (Data, AI, and Society Seminar Series), FUDAPROMAT Panama, University of San Francisco (Data Ethics Seminar, cancelled due to COVID-19), Cornell Information Science (Department Colloquia), Cornell Policy Analysis & Management (Department Seminar), UC Santa Barbara (CS Department Seminar), Microsoft Research New England (MSR Seminar).

## 2019

UT Austin (IROM Department Seminar), University of Pittsburgh (Katz Department Seminar), CMU Software Engineering Institute (Lecture Series), Feria Digitech, IBM Research Africa (Africa Labs Deep Dive), Carnegie Mellon University (*Invited lecturer*, Computational Ethics in NLP course).

## 2018

INFORMS (Fairness and Transparency in Applied Operations Session), AMS Sectional Meeting (Special Session on Social Change In and Through Mathematics and Education), Google (Fairness in ML Workshop), Office of the Attorney General of Colombia (Lecture Series), UNESCO (*Closing Keynote*, Tech4Dev Conference, Data Science and Machine Learning for Development and Humanitarian Action Session), EPFL (CS Department Seminar), Google (Women in Tech Summit).

## 2017

Allegheny County Department of Human Service (DHS Speaker Series).

### SELECTED PRESS *About my work*

- MIT Technology Review - *Predictive policing is still racist—whatever data it uses*
- El Pais - *Algoritmos de prediccin policial: para qu se usan y por qu se ensaan con los ms pobres*
- Motherboard (Vice) - *Algorithms Have Nearly Mastered Human Language. Why Cant They Stop Being Sexist?*
- VentureBeat - *Researchers Expose Biases in Datasets Used to Train AI Models.*
- Microsoft Research blog - *What are the Biases in my Data?*
- Microsoft Research blog - *Microsoft Research to Present Latest Findings on Fairness in Socio-technical Systems at FAT\* 2019.*
- SciDev - *Machine Learning Targets Development Problems.*
- ZettaBytes (EPFL) - *Principles for Effective Machine Learning for Developing Countries.*
- Quartz - *The most Impactful AI Research isnt Happening in Silicon Valley.* (Features ML4D Workshop)
- Connectas - *Patrones matemáticos que ayudan a hacer mejor periodismo.*

### *Consulted as expert*

- Quartz - *In a facial recognition bill backed by Microsoft, three words stand between citizens and their civil rights.*
- CNN - *Think your mask makes you invisible to facial recognition? Not so fast, AI companies say.*
- Quartz - *Amazon and Microsoft pause police facial recognition and demand regulation.*
- Quartz - *The influential project that sparked the end of IBMs facial recognition program.*
- The New York Times - *Many Facial-Recognition Systems Are Biased, Says U.S. Study.*
- New Scientist - *All-Seeing Eyes: The Epic Plan to Track Almost Everything on Earth.*

### PROFESSIONAL SERVICE

#### *Conference Leadership*

- Executive Committee member, ACM FAccT 2022-2025.
- Diversity, Equity and Inclusion co-Chair, ACM FAccT 2021-2022.
- Organizer, ICML Workshop on Human-Machine Collaboration and Teaming, 2022.

- Local Arrangements co-Chair, WITS 2021.
- Area Chair, ACM EAAMO 2021.
- Steering Committee Chair, ML4D 2020.
- Co-founder and co-organizer, Workshop series *Machine Learning for the Developing World (ML4D)* (NeurIPS 2017-2019).
- Co-organizer and program lead, CVPR Workshop *Computer Vision for Global Challenges* (2019).
- Co-founder, co-organizer: FEAT reading group and ML4D reading group at CMU.

*Program committee*

ACM COMPASS 2022, ICDM Workshop on Algorithms towards Ethical and Privacy challenges in Social Media Recommendation Systems 2022, MD4SG 2020, AIES 2020, FAT\* 2019.

*Reviewer*

Management Science, Information Systems Research, Journal of the Association for Information Systems, CSCW 2020, Journal of Digital Imaging, WiML NeurIPS 2017.

PROGRAMMING Python, R, Matlab, L<sup>A</sup>T<sub>E</sub>X.