

Claire Monteleoni

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EDUCATION

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE	DEGREE YEAR
Harvard University	Cambridge, MA	Earth and Planetary Sciences	AB (Bachelors)	1998
Massachusetts Institute of Technology	Cambridge, MA	Computer Science	SM (Masters)	2003
Massachusetts Institute of Technology	Cambridge, MA	Computer Science Minor: Mathematics	PhD	2006

APPOINTMENTS

2020 - present	Editor in Chief, Environmental Data Science, Cambridge University Press, Cambridge, UK
2020 - present	Associate Chair for Inclusive Excellence, Department of Computer Science, University of Colorado Boulder, Boulder, CO
2018 - present	Associate Professor, University of Colorado Boulder, Boulder, CO
2017 - 2018	Jean d'Alembert Fellow, University of Paris-Saclay, Paris
2017 - 2018	Associate Professor, The George Washington University, Washington, DC
2011 - 2017	Assistant Professor, The George Washington University, Washington, DC
2009 - 2011	Adjunct Assistant Professor, Columbia University, New York, NY
2008 - 2011	Associate Research Scientist, Columbia University, New York, NY
2008	Lecturer, University of California San Diego, La Jolla, CA
2006 - 2008	Postdoctoral Scholar, University of California San Diego, La Jolla, CA

AWARDS & HONORS (selected)

Choose France Chair in AI, awarded by INRIA on behalf of government of France, 2022.

Nominated for election, ICML Board, 2022.

Invited Talk, [United Nations AI for Good](#), 2021.

Appointed, National Science Foundation (NSF) Advisory Committee for Environmental Research and Education, 2021.

Appointed Distinguished Friend (Environment Theme), Data Science Institute, Lancaster University, 2021.

[Faculty Fellow](#), Research & Innovation Office, University of Colorado Boulder, 2020.

Elected Councilor of the Association for the Advancement of Artificial Intelligence (AAAI), 2017.

Jean d'Alembert Fellowship Award, 2016.

[Invited Tutorial](#), Neural Information Processing Systems (NeurIPS) Conference, 2014.

Finalist, Data Driven-Discovery Investigator Award, Gordon and Betty Moore Foundation, 2014. Student Paper Award, Third Place (coauthor and co-advisor), Sixth Annual Machine Learning Symposium, New York Academy of Sciences, 2011.

Best Application Paper Award, NASA Conference on Intelligent Data Understanding, 2010.

PUBLICATIONS & PRESENTATIONS (recent)

All publications listed have been peer-reviewed. *Denotes alphabetical author order, by convention. Underlined names are current or former students and postdocs (from my research group, or other research projects supervised).

S. Sinha, B.-M. Hodge, and C. Monteleoni. “Week-ahead Solar Irradiance Forecasting with Deep Sequence Learning.” In *Proceedings of the 11th International Conference on Climate Informatics (CI 2022)*. Oral Presentation.

N. Bliss, E. Bradley, and C. Monteleoni*, “Computing Research for the Climate Crisis.” *Computing Community Consortium (CCC) White Paper*. CoRR abs/2108.05926, <https://arxiv.org/abs/2108.05926>, August 2021.

A. Ganguly, S. Haupt, F. Hoffman, V. Kumar, U. Lall, C. Monteleoni, J. Kumar, N. Singh, J. Hopkins, A. Karpatne, S. Islam, and S. Chatterjee, “Science-integrated Artificial-intelligence for Flooding and precipitation Extremes (SAFE).” In *White Papers on Artificial Intelligence for Earth System Predictability*, U.S. Department of Energy, 2021.

B. Groenke, L. Madaus, and C. Monteleoni. “ClimAlign: Unsupervised statistical downscaling of climate variables via normalizing flows.” In *Proceedings of the 10th International Conference on Climate Informatics (CI)*, Association for Computing Machinery, pages 60–66, 2020. Oral Presentation.

S. Giffard-Roisin, M. Yang, G. Charpiat, C. Kumler-Bonfanti, B. Kegl, and C. Monteleoni, “Tropical Cyclone Track Forecasting using Fused Deep Learning from Aligned Reanalysis Data.” In *Frontiers in Big Data: Data-driven Climate Sciences*, Volume 3, Article 1, 2020

S. Sinha, S. Giffard-Roisin, F. Karbou, M. Dechartres, A. Karas, N. Eckert, C. Coleou, and C. Monteleoni, “Variational autoencoder anomaly-detection of avalanche deposits in satellite SAR imagery.” In *Proceedings of the 10th International Conference on Climate Informatics (CI)*, Association for Computing Machinery, pages 113–119, 2020. Poster Presentation.

M. Saha, R. S. Nanjundiah, and C. Monteleoni. “CNN-Based Forecasting of Intraseasonal Mean and Active/Break Spells for Indian Summer Monsoon.” In *Proceedings of the 10th International Conference on Climate Informatics (CI)*, Association for Computing Machinery, pages 15-21, 2020. Poster Presentation.

N. Cesa-Bianchi, T. Cesari, and C. Monteleoni*, “Cooperative Online Learning: Keeping your Neighbors Updated.” In *Proceedings of the 31st International Conference on Algorithmic Learning Theory (ALT)*, *Proceedings of Machine Learning Research (PMLR) 117:234-250*, 2020. Oral presentation. [Acceptance rate: 29.7%]

M. Saha, D. Soni, B. Finley, and C. Monteleoni, “Causal Link Detection and the Prediction of the Indian Summer Monsoon.” In *Proceedings of the 9th International Workshop on Climate Informatics (CI)*, pp. 136-141, 2019. Poster presentation.

M. Saha, D. Soni, B. Finley, and C. Monteleoni, “Changes in Information Hubs over the Pacific ENSO Region.” In *Proceedings of the 9th International Workshop on Climate Informatics (CI)*, pp. 142-146, 2019. Poster presentation.

S. Sinha, S. Giffard-Roisin, F. Karbou, N. Eckert, M. Dechartres, C. Coleou, and C. Monteleoni, “Can Avalanche Deposits be Effectively Detected by Deep Learning on Sentinel-1 Satellite SAR Images?” In *Proceedings of the 9th International Workshop on Climate Informatics (CI)*, pp. 147-151, 2019. Poster presentation.

S. Giffard-Roisin, M. Yang, G. Charpiat, B. Kegl, and C. Monteleoni, “Fused Deep Learning for Hurricane Track Forecasting From Reanalysis Data.” In *Proceedings of the 8th International Workshop on Climate Informatics (CI)*. Chen, C., D. Cooley, J. Runge, and E. Szekely, (Eds.), pp. 69-72, 2018. Poster presentation.

KEYNOTE/PLENARY TALKS, COLLOQUIA, & DISTINGUISHED SPEAKER SERIES (recent)

“Deep Unsupervised Learning for Climate Informatics”

- Keynote Talk, *Doctoral Consortium on Computational Sustainability (event held virtually)*, March 2022.
- Advancing Sustainability with AI, Distinguished Speaker Series and Invited Panelist, *Hariri Institute for Computing, Boston University (events held virtually)*, February 2022.

- Colloquium, Department of Physics, *Carnegie Mellon University & University of Pittsburgh (remote participation)*, October 2021.
- Keynote Talk, EarthVision: Large Scale Computer Vision for Remote Sensing Imagery, workshop at *Computer Vision and Pattern Recognition (CVPR) 2021 Conference (event held virtually)*, June 2021.
- Distinguished Speaker Series, *University of Lancaster, UK (event held virtually)*, March 2021.

“Climate Informatics: Machine Learning for the Study of Climate Change”

- Accelerating climate science with AI, seminar series, United Nations AI for Good, (event held virtually), September 2021.
- Keynote Talk, ‘Hi! PARIS summer school on AI and Data for Society and Business, *Institut Polytechnique de Paris and HEC Paris, France (remote participation)*, July 2021.
- Keynote Talk, Cambridge University / BAS Workshop on Machine Learning in the Environmental Sciences, *British Antarctic Survey, Cambridge, UK*, June 2019.

“AI meets Dynamical Systems for the study of Climate Change,” Plenary Talk and Invited Panelist, *Workshop on Integration of Deep Neural Models and Differential Equations (DeepDiffeq), ICLR 2020 (event held virtually)*, April 2020.

“Climate Change: Challenges for Machine Learning.” Invited Tutorial, Neural Information Processing Systems (NeurIPS) Conference. Co-presenter: Arindam Banerjee. Montreal, December 2014.

PRESS

Robert Lee Hotz, [Climate Change Data Deluge Has Scientists Scrambling for Solutions](#). In *The Wall Street Journal*, 5 December 2021.

TWiML AI Podcast with Sam Charrington, [Deep Unsupervised Learning for Climate Informatics with Claire Monteleoni](#), 1 July 2021.

Digital Future Society, [Interview of Claire Monteleoni](#). Spanish Ministry of Economy and Business and Mobile World Capital Barcelona, 8 September 2020.

Javier Barbuzano, [Teaching Machines to Detect Climate Extremes](#). In *EOS*, 17 June 2020.

Maria Paz Sartori, La informatica climatica y la inteligencia artificial estan en un “interesante punto de quiebre” y prometen mejorar pronosticos. In *Weekly Busqueda*, Uruguay, 27 January 2020.

Jackie Snow, [How artificial intelligence can tackle climate change](#). In *National Geographic*, 18 July, 2019.

CU Engineering, [Earthly Exploration: Machine Learning for Climate Prediction](#), *CU Engineering Magazine: Spring 2019 Issue*, 24 April, 2019.

Emma Byrne, [From ethics to accountability, this is how AI will suck less in 2019](#). In *WIRED*, 27 December, 2018.

Lucien Crowder, [AI and climate: On the “bleeding edge” with a pioneering researcher](#). In *Bulletin of the Atomic Scientists*, 13 February, 2018.

World Economic Forum, [Harnessing Artificial Intelligence for the Earth](#), January 2018.

Nicola Jones, [How machine learning could help to improve climate forecasts](#). In *Nature News*, Volume 548, pp. 379–380, doi:10.1038/548379a, 24 August 2017. Subsequently picked up by other publications, including [Communications of the ACM](#) March 2017

Lina Sorg, [Forward-Looking Panel Tackles Issues of the Mathematics of Planet Earth](#). In *Society for Industrial and Applied Mathematics (SIAM) News*, October 2016.

Valerie Borde, [Les nouvelles intelligences](#). In *L’actualité*, September 2016.

Women in Machine Learning (WiML), [Claire Monteleoni](#). In *Profiles of Women in Machine Learning*, February 2016.

Marijke Unger, [Fall “hackathon” to predict El Nino held at NCAR](#). In *National Center for Atmospheric Research (NCAR) Newsletter*, December 2015.

Brian Bevirt, [IMAGE summer conferences focus on Big Data for research](#). In *National Center for Atmospheric Research (NCAR) Newsletter*, October 2015.

National Science Foundation, [Computing innovations for a sustainable society](#). In NSF Press Release 14-137, October 2014.

Jeremy Deaton, [What Machine Learning Can Do For Climate Science](#). In *Planet Forward*, George Washington University, May 2014.

Joanne Welsh, [Making Sense of Big Data](#). In *Synergy*, George Washington University, Fall 2012.

PROFESSIONAL SERVICE (selected)

FOUNDER

Founding Editor in Chief, *Environmental Data Science*, Cambridge University Press, journal launched December 2020. Developed journal concept and appointed Editors and Advisory Board. Oversee review process.

The International Conference on Climate Informatics. Co-founded annual, international workshop (now a conference), 2011; launched *Climate Informatics Wiki*, 2011; co-developed the *Climate Informatics Hackathon*, 2015. Sole PI of multi-year NSF grant for the workshop. Founding member of the *Climate Informatics Steering Committee*. The Conference marked 10 years in 2020, and the Hackathon marked 7 years in 2021. Attendees from over 23 countries and 30 U.S. States.

CHAIR/ORGANIZER

Co-Chair, *Visioning Committee on Computing for Climate Change*, Computing Community Consortium (CCC), 2021-.

Coordinator (Program) and Diversity Coordinator, *Kavli Institute for Theoretical Physics Program: Machine Learning and the Physics of Climate*, 2021.

Co-Chair, *Earth Day*, KDD 2020.

Co-Chair, *Special Track on Computational Sustainability*, AAAI 2016.

BOARDS (recent)

NSF Advisory Committee for Environmental Research and Education (AC-ERE), 2021-.

Convergence Advisory Board, *WIFIRE Commons*, 2021-.

Advisory Board, *Climate Change AI (CCAI)*, 2021-.

Global Partnership on AI (GPAI) Committee on Climate Action & Biodiversity Preservation, 2021-.

Advisory Board, *iMIRACLI Marie Curie ITN*, 2020-.

Executive Council (elected), *Association for the Advancement of Artificial Intelligence (AAAI)*, 2017-2020.

VISIONING ACTIVITIES

Invited Participant, *NSF Engineering Research Visioning Alliance (ERVA) Visioning Event: The Role of Engineering in Addressing Climate Change*, December 2021.

Co-author and co-organizer, *Computing Community Consortium visioning activities on the role of computing to address climate change*. We brought together a diverse set of experts in a series of roundtables, from which we wrote a white paper, “*Computing Research for the Climate Crisis*,” that has already impacted US research policy, 2021.

Invited Participant, *DOE BER Grand Challenges II Workshop*. Department of Energy workshop to “develop a long-term vision” for Biological and Environmental Research, March 2017.

Invited Participant, *NSF EarthCube Early Career Strategic Visioning Workshop*, *Carnegie Institution for Science*, Washington, DC, November 2012