

POSITIONS

Assistant Professor — University of Michigan Ann Arbor, MI
School for Environment and Sustainability Incoming Fall 2026

- Geospatial Data Sciences Interests: Remote Sensing Foundation Models
- Ecosystem Science and Management Interests: Rapid Environmental Change
- Conservation & Restoration Interests: Citizen Science & Field-Based Approaches

Postdoctoral Associate — Massachusetts Institute of Technology Cambridge, MA
Schwarzman College of Computing 2025 - 2026

- Advisor: Prof. Sara Beery — MIT, Electrical Engineering & Computer Science
- Co-Advisor: Sherrie Wang — MIT, Mechanical Engineering
- Research Interests: Vegetation Change Monitoring, Multimodal Foundation Models

Visiting Researcher — Federal University of Minas Gerais Belo Horizonte, Brazil
Department of Vegetation Biology 2024

- Fulbright research grant recipient - 2023-2024 Cohort
- Advisor: Prof. Danilo Neves — Federal University of Minas Gerais, Plant Biology
- Research Interests: Ecoinformatics, Community Ecology, Neotropical Ecology

EDUCATION

Doctor of Philosophy — Stanford University Stanford, CA
Computer Science, Stanford Artificial Intelligence Laboratory 2019 - 2025

- Advisor: Prof. Moises Exposito Alonso — UC, Berkeley, Integrative Biology
- Co-Advisor: Prof. Noah Goodman — Stanford University, Computer Science
- Research Interests: Computer Vision for Ecology, AI for Sustainability

Bachelor of Science — Southwestern University Georgetown, TX
Computer Science & Chemistry, Data Science Minor 2015 - 2019

- Advisor: Prof. Jacob Schrum — Southwestern University Computer Science
- Phi Beta Kappa, Alpha Chi, and Upsilon Pi Epsilon inductee
- GPA: 3.954 / 4.00, Summa Cum Laude

PUBLICATIONS

1. Elena Sierra^{*†}, **Lauren E. Gillespie^{*}**, Salim Soltani, Moises Exposito-Alonso, Teja Kattenborn. DivShift: Exploring Domain-Specific Distribution Shift in Large-Scale, Volunteer-Collected Biodiversity Datasets. *Proceedings of the 39th AAAI Conference on Artificial Intelligence, AI for Social Impact Track*, April 2025. **Best Paper Award, AAAI-AISI Track** out of 382 papers. (* denotes first authors; † denotes student mentee)
2. Andy Huynh^{*†}, **Lauren E. Gillespie^{*}**, Jael Lopez-Saucedo[†], Claire Tang[†], Rohan Sikand[†], Moises Exposito-Alonso. Contrastive ground-level image and remote sensing pre-training improves representation learning for natural world imagery. *Proceedings of the European Conference on Computer Vision*, October 2024. Poster Presentation, ~28.% selection rate (2,395 / 8,585 papers) (* denotes first authors; † denotes student mentee)
3. **Lauren E. Gillespie**, Megan Ruffley, Moises Exposito-Alonso. Deep learning models map rapid plant species changes from citizen science and remote sensing data. *Proceedings of the National Academy of Sciences*, September 2024.
4. Ruth Y. Oliver, Melissa Chapman, Nathan Emery, **Lauren E. Gillespie**, Natasha Gownaris, Sophia Leiker, Anna C. Nisi, David Ayers, Ian Breckheimer, Hannah Blondin, Ava M. Hoffman, Camille Pagniello, Megan Raisle, Naupaka Zimmerman. Opening a conversation on responsible environmental data science in the age of large language models. *Environmental Data Science*, January 2024.
5. Daniel Kunin, Javier Sagastuy-Brena, **Lauren E. Gillespie**, Eshed Margalit, Hidenori Tanaka, Surya Ganguli, Daniel LK Yamins. The Limiting Dynamics of SGD: Modified Loss, Phase-Space Oscillations, and Anomalous Diffusion. *Neural Computation*, December 2023.

PUBLICATIONS
(CONTINUED)

6. Moises Exposito-Alonso, Tom A Booker, Lucas Czech, **Lauren E. Gillespie**, Shannon Hateley, Christopher C Kyriazis, Patricia Lang, Laura Leventhal, David Nogues-Bravo, Veronica Pagowski, Megan Ruffley, Jeffrey P Spence, Seba Toro Arana, Clemens Weiss, Erin Zess. Genetic diversity loss in the Anthropocene. *Science*, September 2022.
7. On the opportunities and risks of foundation models. Rishi Bommasani, ... **Lauren E. Gillespie**... + 112 more authors. Environment, Ethics of Scale sections. *arXiv*, August 2021.
8. Isabel Tweraser, **Lauren E. Gillespie**, Jacob Schrum. Querying across time to interactively evolve animations. *Proceedings of the Genetic and Evolutionary Computation Conference*, August 2018.
9. **Lauren E. Gillespie**, Gabriela R. Gonzalez, and Jacob Schrum. Comparing Direct and Indirect Encodings using both Raw and Hand-Designed Features in Tetris. *Proceedings of the Genetic and Evolutionary Computation Conference*, August 2017.

UNDER
REVIEW

1. Nicole Bison[‡], Marcella Cross[‡], Brian J. Enquist[‡], Michelle Greve[‡], Aud H. Halbritter[‡], Julia Kemppinen[‡], Brian Maitner[‡], Sean T. Michaletz[‡], Jocelyn Navarro[‡], Pekka Niittynen[‡], Peter C. le Roux[‡], Vigdis Vandvik[‡], Joe White[‡], Bezawit Yilma Abebe, Nadine Michaela Arzt, Ludwig Baldaszi, Lina Aragón, Samuel Beale, Kristine Birkeli, Anya Palm Courtenay, Hilary Rose Dawson, Liliya Kirilova Draganova, **Lauren Gillespie**, Kaleb Goff, Anna Gowera, Axel Gualdoni-Becerra, Onalenna Gwate, Liyenne Wu Chen Hagenberg, Priya Hansda, Becca Harris, Olivia Jones, Joshua Lee, Michelle Louw, Aino-Maija Määttänen, Nathan Malamud, Lesago Malekana, Bridgette Mc Millan, Nasser Mohammed, Michael Mustri, Samson Mekasha, Sara Shemsu Nasir, Bismark Ofosu-Bamfo, Akuonani Zakeyo Phiri, Morgan Raath-Kruger, Eline Sterre Rentier, Carmen Vazquez Ribera, Grecia Rivas, Francisco Navarro-Rosales, Tin Widyani Satriawan, Imke Smit, Paul Abayomi, Sobowale Soremi, Ragnhild Svensen Stokka, Jiri Subrt, Jonas Trepel, Jakub Wiczorkowski. Plant traits and associated data from an elevation gradient in the Drakensberg, South Africa. *Under review at Scientific Data*. ([‡] denotes lead authors)
2. Salim Soltani, **Lauren Gillespie**, Moises Exposito-Alonso, Olga Ferlian, Nico Eisenhauer, Hannes Feilhauer, Teja Kattenborn. From Ground Photos to Aerial Insights: Automating Citizen Science Labeling for Tree Species Segmentation in UAV Images. *Under review at Biogeosciences*.

INVITED TALKS

- 3rd Workshop on Imageomics at NeurIPS 2025 — *Keynote Speaker* 2025.12
- California Biodiversity Network — *Working Group Seminar* 2025.06
- University of California, Berkeley — *Ecolunch Seminar, ESPM* 2025.05
- University of Texas, Austin — *Department Seminar, Integrative Biology* 2025.04
- University of California, Berkeley — *Jepson Herbarium Seminar* 2025.03
- University of California, Berkeley — *Working Group Seminar, DSE Initiative* 2025.01
- University of Michigan, Ann Arbor — *SEAS Department Seminar* 2025.01
- Federal University of Minas Gerais — *Department Seminar, Plant Biology* 2024.11
- University of Freiburg — *Department Seminar, Remote Sensing* 2024.11
- Stanford Spatial Biology workshop — *Invited Lecture* 2023.08
- University of Tokyo Waves in AI Panel — *Invited Lecture* 2023.03
- UC Davis Environmental Data Science Course — *Invited Lecture* 2022.05
- Carnegie Science — *Department Seminar, Global Ecology* 2021.11
- Muskingum University — *Department Seminar, Computer Science* 2021.10
- UC Davis Environmental Data Science Course — *Invited Lecture* 2021.09
- NASA Jet Propulsion Lab — *Department Seminar, Carbon Cycling* 2021.01

CONFERENCE
ABSTRACTS

- Living Data 2025 Joint Conference, *Poster* 2025.10
- NeurIPS Tackling Climate Change with Machine Learning Workshop, *Poster* 2024.12
- GEO-BON Conference on Monitoring Biodiversity for Action, *Oral Presentation* 2023.10
- Ecological Society of America Annual Conference, *Inspire Presentation* 2023.08
- Evolution Annual Meeting, *Oral Presentation* 2023.06
- Ecological Society of America Annual Meeting, *Oral Presentation* 2022.08
- American Geophysical Union Annual Meeting, *Oral Presentation* 2021.12
- Biodiversity Information Science and Standards, *Oral Presentation* 2021.10
- Ecological Society of America Annual Meeting, *Oral Presentation* 2021.08
- American Geophysical Union Annual Meeting, *Oral Presentation* 2020.12
- NeurIPS Women in Machine Learning Workshop, *Poster* 2020.12

TEACHING

- BOT818:** Using Artificial Intelligence for Botanical Studies **Instructor of Record**
Federal University of Minas Gerais — Plant Biology Department 2024.11 - 2024.12
- CS197:** Computer Science Research **Instructor of Record**
Stanford University — Computer Science Department 2023.03 - 2023.06
- CS197C:** Using Computer Science Research for CURIS **Instructor of Record**
Stanford University — Computer Science Department 2023.03 - 2023.06
- CS221:** Artificial Intelligence: Principles and Techniques **Teaching Assistant**
Stanford University — Computer Science Department 2021.09 - 2021.12

FUNDING
& AWARDS

- METEOR Fellowship** | Massachusetts Institute of Technology 2025.07 - 2026.08
Automating Anthropogenic Biodiversity Monitoring with Foundation Models **\$127,200**
- Brazil Student Research Award** | US Fulbright Program 2024.02 - 2024.12
Mapping Brazil's Plant Biodiversity from the Skies **\$11,750**
- McCoy Family Center for Ethics in Tech Grant** | Stanford University 2021.01 - 2024.12
Scenes from the Anthropocene **\$20,000**
- AI Innovation Grant** | Climate Change AI 2022.01 - 2024.12
ForestBench: Equitable Benchmarks for Monitoring, Reporting and Verification of Nature-Based Solutions with Machine Learning **\$150,000**
- TomKat Fellowship for Translational Research** | Stanford University 2021.07 - 2025.08
Monitoring the Sustainability + Resilience of California's Ecosystems from Space **\$236,478**
- Graduate Research Fellowship** | National Science Foundation 2021.07 - 2025.08
Improving Neuroevolution Using Biologically-Inspired Environmental Change **\$313,813**

SUPERVISION

Master's students

- Elena Sierra** | Stanford University | Computer Science 2023.03 - Current
- Co-authored machine learning conference publication.
 - Stanford Krupp Internship Program Grantee, Summer 2024.
- Andy V. Huynh** | Stanford University | Computer Science 2023.03 - 2024.10
- Co-authored machine learning conference publication.
 - Best presentation runner-up, Stanford Sustainability Data Science Conference.

Undergraduate students

- Yan Lucas** | Federal University of Minas Gerais | Biology 2024.04 - 2024.12
- CNPq Scientific Initiation Scholarship Recipient.
- Zouberou Sayibou** | Stanford University | Computer Science 2022.09 - 2023.07
- SACNAS 2023 Travel Award Winner.

ACADEMIC
SERVICE

Reviewer Conference on Neural Information Processing Systems	2025.07 - Current
Reviewer Computer Vision for Ecology Workshop Series	2025.07 - Current
Reviewer Climate Change AI Workshop Series	2025.02 - Current
Reviewer Association for the Advancement of Artificial Intelligence	2024.08 - Current
Main organizer Inspire Session Ecological Society of America	2023.08
Co-organizer Symposium Session Ecological Society of America	2023.08
Co-organizer Data for Sustainability Conference Stanford Data Science	2023.04

OUTREACH

Member Graduate Student Council Stanford Computer Science	2022.09 - 2023.09
Co-organizer Summer Research Grant Program Black in AI	2021.04 - 2021.09
Co-organizer Inclusion in AI Stanford Computer Science	2019.09 - 2022.09