

ClimateNLP 2025

**The 2nd Workshop on Natural Language Processing Meets
Climate Change**

Proceedings of the Workshop

July 31, 2025

©2025 Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL)
317 Sidney Baker St. S
Suite 400 - 134
Kerrville, TX 78028
USA
Tel: +1-855-225-1962
acl@aclweb.org

ISBN 979-8-89176-259-6

Introduction

We are happy to welcome you to ClimateNLP 2025, the second ACL workshop on Natural Language Processing Meets Climate Change. The workshop takes place on the 31st of July 2025 in the wonderful city of Vienna, Austria.

ClimateNLP aims to be the premier publication venue for research in the intersection of Natural Language Processing (NLP) and climate change. The workshop aims to discuss how NLP methods can be incorporated into climate change science and climate change action. This year, the program includes four keynote talks by Frida Berry Eklund (Klimatkollen), Emily Kormanyos (Bundesbank), Ruth Schmidt (German Corporation for International Cooperation), and Naomi Oreskes (Harvard University). Furthermore, we hold two panel discussions on the role of ClimateNLP in the industry and future research directions of ClimateNLP. A group discussion, four paper presentations, and two poster sessions round up the day.

We received 35 submissions this year, and recruited 45 active Program Committee (PC) who are distinguished experts in the field of NLP, climate change, or both. Every submission received at least two reviews. When making our selections for the program, we carefully considered the reviews, and conducted extensive debate and discussion among the organizing committee members. The members of the Program Committee did an excellent job in reviewing the submitted papers, and we thank them for their essential role in selecting the accepted papers and helping produce a high-quality program for the conference. In line with our purpose of discussing and learning about the intersection of NLP and Climate Change, our aim has been to create an inclusive program that accommodates as many favourably rated papers as possible. We accepted 22 papers (acceptance rate 62.8

We thank our program committee members for committing their time to help us select an excellent technical program.

We thank all the authors who submitted to the workshop and all workshop participants for making ClimateNLP 2025 a success and for growing the research areas of NLP for climate change with their fine work.

Gaku Morio, Tobias Schimanski, Jingwei Ni, and Organizing Committees

Organizing Committee

Program Chairs (by Last Name Alphabetical Order)

Kalyan Dutia, Climate Policy Radar, the UK
Peter Henderson, Princeton University, the US
Markus Leippold, University of Zurich, Switzerland
Christopher Manning, Stanford University, the US
Gaku Morio, Stanford University, the US
Veruska Muccione, University of Zurich, Switzerland
Jingwei Ni, ETH Zurich, Switzerland
Tobias Schimanski, University of Zurich, Switzerland
Dominik Stammach, Princeton University, the US
Alok Singh, University of Oxford, the UK
Alba (Ruiran) Su, University of Oxford, the UK
Saeid A. Vaghefi, University of Zurich, Switzerland

Program Committee

Reviewers

Marco Bronzini, University of Trento
Janelle Cai, Massachusetts Institute of Technology
Thomas Corringham, University of California, San Diego
Hari Prasanna Das, University of California, Berkeley
Lukas Ebeling, ETH Zurich
Yu Fan, ETH Zurich
Henry Franks, Climate Policy Radar
Elizabeth Gallagher, Nesta
Nupoor Gandhi, Carnegie Mellon University
Dario Garigliotti, University of Bergen
Sanjay Girija, Google
Andre Graubner, Tsinghua University
Lavanya Gupta, J.P. Morgan Chase
Yifan Hou, Department of Computer Science, Swiss Federal Institute of Technology
Aditya Jain, Applied Research Scientist
Charlott Jakob, Technische Universität Berlin
Elphin Joe, Pennsylvania State University
Matyas Juhasz, Climate Policy Radar
Lynn Kaack, Hertie School of Governance
Shashank Kapoor, Google
Ken Kawamura, Independent
Shima Khanehzar, Cisco
Imene Kolli, University of Zurich
Sai Koneru, Pennsylvania State University
Ambar Nag, Scetti
Wilhelmina Nekoto, Masakhane
Poli Nemkova, University of North Texas
Vincent Nguyen, Cisco
Harrison Pim, Climate Policy Radar
Jakob Prange, Universität Augsburg
Harri Rowlands, InfluenceMap
Diya Saha, Tata Consultancy Services Limited, India
Thoudam Doren Singh, National Institute of Technology Meghalaya
Nick Sorros, MantisNLP
Anna Steinberg, Ludwig-Maximilians-Universität München
David Thulke, RWTH Aachen University and AppTek
Tommy Tran,
Mark Tyrrell, GFA Consulting Group GmbH
Adrian Ulges, RheinMain University of Applied Sciences
Aida Usmanova, Leuphana Universität Lüneburg
Junling Wang, ETHZ - ETH Zurich
Jakob Wedemeyer, Potsdam Institute for Climate Impact Research
Zukang Yang, Eonum Inc
Yongan Yu, University of McGill
Zhengyuan Zhu, University of Texas at Arlington

Table of Contents

<i>Enhancing Retrieval for ESGLLM via ESG-CID: A Disclosure Content Index Finetuning Dataset for Mapping GRI and ESRS</i>	
Shafiuddin Rehan Ahmed, Ankit Shah, Quan Hung Tran, Vivek Khetan, Sukryool Kang, Ankit Mehta, Yujia Bao and Wei Wei	1
<i>Judging It, Washing It: Scoring and Greenwashing Corporate Climate Disclosures using Large Language Models</i>	
Marianne Chuang, Gabriel Chuang, Cheryl Chuang and John Chuang	17
<i>Bridging AI and Carbon Capture: A Dataset for LLMs in Ionic Liquids and CBE Research</i>	
Sougata Saha and Gaurab Sarkar	32
<i>Applying the Character-Role Narrative Framework with LLMs to Investigate Environmental Narratives in Scientific Editorials and Tweets</i>	
Francesca Grasso, Stefano Locci and Manfred Stede	49
<i>Integrating Expert Labels into LLM-based Emission Goal Detection: Example Selection vs Automatic Prompt Design</i>	
Marco Wrzalik, Adrian Ulges, Anne Uersfeld, Florian Faust and Viola Campos	68
<i>ClimateIE: A Dataset for Climate Science Information Extraction</i>	
Huitong Pan, Mustapha Adamu, Qi Zhang, Eduard Dragut and Longin Jan Latecki	76
<i>Biodiversity ambition analysis with Large Language Models</i>	
Stefan Troost, Roos Immerzeel and Christoph Krueger	99
<i>AI and Climate Change Discourse: What Opinions Do Large Language Models Present?</i>	
Marcelo Sartori Locatelli, Pedro Dutenhefner, Arthur Buzelin, Pedro Loures Alzamora, Yan Aquino, Pedro Augusto Torres Bento, Samira Malaquias, Victoria Estanislau, Caio Santana, Lucas Dayrell, Marisa Affonso Vasconcelos, Wagner Meira Jr. and Virgilio Almeida	113
<i>Evaluating Retrieval Augmented Generation to Communicate UK Climate Change Information</i>	
Arjun Biswas, Hatim Chahout, Tristan Pigram, Hang Dong, Hywel T.p. Williams, Fai Fung and Hailun Xie	126
<i>An Automated LLM-based Pipeline for Asset-Level Database Creation to Assess Deforestation Impact</i>	
Avanija Menon and Ovidiu Serban	142
<i>Detecting Hyperpartisanship and Rhetorical Bias in Climate Journalism: A Sentence-Level Italian Dataset</i>	
Michele Joshua Maggini, Davide Bassi and Pablo Gamallo	168
<i>Scaling Species Diversity Analysis in Carbon Credit Projects with Large-Context LLMs</i>	
Jessica Walkenhorst and Colin McCormick	188
<i>ClimateEval: A Comprehensive Benchmark for NLP Tasks Related to Climate Change</i>	
Murathan Kurfali, Shorouq Zahra, Joakim Nivre and Gabriele Messori	194
<i>Bidirectional Topic Matching: Quantifying Thematic Intersections Between Climate Change and Climate Mitigation News Corpora Through Topic Modelling</i>	
Raven Adam and Marie Kogler	208

<i>CPIQA: Climate Paper Image Question Answering Dataset for Retrieval-Augmented Generation with Context-based Query Expansion</i>	
Rudra Mutalik, Abiram Panchalingam, Loitongbam Gyanendro Singh, Timothy J. Osborn, Ed Hawkins and Stuart E. Middleton	218
<i>Robust Table Information Extraction from Sustainability Reports: A Time-Aware Hybrid Two-Step Approach</i>	
Hendrik Weichel, Martin Simon and Jörg Schäfer	233
<i>Listen to the Context: Towards Faithful Large Language Models for Retrieval Augmented Generation on Climate Questions</i>	
David Thulke, Jakob Kemmler, Christian Dugast and Hermann Ney	245
<i>Interactive platform for the exploration of large-scale 'living' systematic maps</i>	
Tim Repke	260
<i>Transforming adaptation tracking: benchmarking Transformer-based NLP approaches to retrieve adaptation-relevant information from climate policy text</i>	
Jetske Bonenkamp, Robbert Biesbroek and Ioannis N. Athanasiadis	266
<i>LLM-Driven Estimation of Personal Carbon Footprint from Dialogues</i>	
Shuqin Li, Huifang Du and Haofen Wang	278
<i>Can Reasoning LLMs Synthesize Complex Climate Statements?</i>	
Yucheng Lu	288

Program

Thursday, July 31, 2025

09:00 - 09:05	<i>Opening Remarks</i>
09:05 - 09:30	<i>Keynote Speech 1: Frida Berry Eklund</i>
09:30 - 10:00	<i>Oral Presentation Session 1</i>
10:00 - 10:45	<i>Poster Session 1</i>
10:45 - 11:00	<i>Coffee Break</i>
11:00 - 11:05	<i>Session 2 Introduction</i>
11:05 - 11:30	<i>Keynote Speech 2: Emily Kormanyos</i>
11:30 - 12:00	<i>Panel Discussion 1 - ClimateNLP in practice with Frida Berry Eklund, Emily Kormanyos, Ruth Schmidt</i>
12:00 - 13:30	<i>Lunch Break</i>
13:30 - 13:35	<i>Session 3 Introduction</i>
13:35 - 14:00	<i>Keynote Speech 3: Ruth Schmidt</i>
14:00 - 14:30	<i>Oral Presentation Session 2</i>
14:30 - 15:00	<i>Panel Discussion 2 - Future of Research in ClimateNLP with Markus Leippold, Christopher D. Manning, Peter Henderson</i>
15:00 - 15:45	<i>Poster Session 2</i>
15:45 - 16:00	<i>Coffee Break</i>
16:00 - 16:05	<i>Session 4 Introduction</i>

Thursday, July 31, 2025 (continued)

16:05 - 16:30 *Keynote Speech 4: Naomi Oreskes*

16:30 - 17:15 *Question-Guided Open Discussion: Needs of ClimateNLP*

17:15 - 17:30 *Closing Remarks by Markus Leippold*

17:30 - 17:30 *Closing Remarks*