MANILA24: SIGIR 2024 Workshop on Information Retrieval for Climate Impact

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ABSTRACT

The MANILA24 workshop brings together researchers and practitioners from academia, industry, governments, and NGO's to identify and discuss core research problems in information retrieval for climate impact. The workshop aims to foster collaboration by bringing communities together that have so far not been very well connected – IR, systematic reviews, and climate change. The purpose is to help accelerate the development of IR technology that supports our understanding of climate impact publications and the articulation of recommended actions. Importantly, this includes introducing IR researchers climate impact, introducing researchers in climate to state-of-the-art IR technology, and developing a shared research agenda.

CCS CONCEPTS

• **Information systems** → **Environment-specific retrieval**.

KEYWORDS

Climate impact, Systematic reviews

1 MOTIVATION FOR THE WORKSHOP

Climate change is a far-reaching, global phenomenon that will impact many aspects of our society. The evidence base for observed climate impacts is expanding, and the wider climate literature is growing exponentially. Systematic reviews and systematic maps offer structured ways to collectively identify and describe this evidence [10] while maintaining transparency, attempting to ensure comprehensiveness and reduce bias [1].

Evidence-based assessments of observed climate change impacts are performed by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body that reviews the science related to climate change [1]. In particular, Working Group II of the IPCC assesses the impacts, adaptation, and vulnerabilities related to climate change, from a world-wide to a regional view of ecosystems and biodiversity, and of humans and their diverse societies, cultures and settlements [5]. It considers their vulnerabilities and the capacities and limits of these natural and human systems to adapt to climate change and thereby reduce climate-associated risks together with options for creating a sustainable future for all through an equitable and integrated approach to mitigation and adaptation efforts at all scales.

The IR problem. The exponential growth in peer-reviewed scientific publications on climate change is pushing manual expert assessments to their limits.

- To continue to enable Working Group II of the IPCC to perform their assessments, how can effective access be provided to the growing body of peer-reviewed literature on climate change impact?
- Recent work has begun to explore ways of handling literature on climate impact by scaling systematic review and map methods [2]. How well do these methods work and what are effective evaluation metrics in this scenario?

Fully using the available knowledge on emerging climate change impacts is key to informing global policy processes as well as regional and local risk assessments and on-the-ground action on climate adaptation [8]. While the global policy process may be served well with literature assessments presenting results aggregated on the level of continents or world regions, informing climate adaptation typically requires more highly localized and contextualized information on climate impacts [4].

- Going beyond [1], how can large language model-based methods be used to organize, structure, and summarize informal publications on climate impact from across the globe?
- How can peer-reviewed and informal publications be combined to inform action on climate impact?

Interest to the IR community. The IR community has a long history of hosting workshops and benchmark events that focus on the societal implications and positive impact of the technology being presented and evaluated at its conferences. Relatively recent examples include the workshop on Privacy-Preserving IR at SIGIR 2014 [9], the FACT-IR workshop at SIGIR 2019 [7] on responsible information retrieval, the QUARE workshop at SIGIR 2022 [6] on explainable news recommendation, and the benchmarking activities aimed at technologically assisted reviews in empirical medicine organized at CLEF eHealth 2017–2019 [3]. MANILA24 is a natural successor to these activities, sharing both a strong emphasis on positive impact and very challenging retrieval scenarios that go beyond the mainstream with them.

The MANILA24 workshop brings together researchers and practitioners from academia, industry, governments, and NGO's to identify and discuss core research problems in information retrieval for climate impact. The workshop aims to foster collaboration by bringing communities together that have so far not been very well connected – IR, systematic reviews, and climate change. The purpose is to help accelerate the development of IR technology that supports our understanding of climate impact publications and the articulation of recommended actions. Importantly, this includes introducing IR researchers climate impact, introducing researchers in climate to state-of-the-art IR technology, and developing a shared research agenda.

A research agenda. The workshop is meant to help build a community around the topic of information retrieval for climate impact and activate its participants to articulate both short-term and long-term research agenda whose purpose is to support climate impact and design actionable challenges for IR researchers.

2 THEME AND PURPOSE OF THE WORKSHOP

The primary theme of the workshop is information retrieval for climate impact. The purpose of the workshop is to provide a venue for discussing and compiling a research agenda for information retrieval for climate impact. We will bring together researchers, applied researchers, and practitioners in climate impact, information retrieval, and systematic reviews to gain a broader understanding of the information retrieval challenges faced in climate impact. We aim to foster collaboration, discussion, and create broader awareness in the IR community of the unique challenges posed by the climate impact domain.

3 FORMAT

MANILA24 will be held as a **half-day workshop**. The emphasis will be on discussion, not simply a mini-conference but a dynamic sharing of ideas. The workshop will be organized along four areas of interest: (i) Information needs in climate impact; (ii) Search and analysis of formal literature for climate impact; (iii) Search and analysis of informal publications for climate impact; and (iv) Resources to support IR for climate impact.

We envisage the following format to encourage maximum discussion and interaction:

- The workshop will start with four invited talks about the four areas of interest listed above, each of 10 to 15 minutes, delivered by colleagues whose work is centered around issues related to each of these topics (duration: 45 to 60 minutes).
- This will be followed by 5 minute lightning talks and/or a poster session where participants present relevant recent or ongoing work. To this end we will publish a call for extended abstracts of 2–4 pages, and the specific presentation format (e.g., poster vs. short presentations) will depend on the number of submissions we receive (duration: 45 to 60 minutes).
- These presentations will be followed by a breakout session aimed at formulating more in-depth agendas for each of the four areas, as well as identifying potential tensions and/or dependencies between them (duration: 75 to 90 minutes).

- The participants will then get back together to report, and conclude with specific and actionable research agendas for each of the four lines.

We plan to assemble the summaries of the discussions and the proposed research agendas in a position paper for SIGIR Forum (similar to [7]).

4 PROGRAM COMMITTEE MEMBERS

Our program committee consist of a mixture of colleagues who work on climate impact, systematic reviews, and IR and NLP for climate impact.

- Max Callaghan (Mercator Research Institute on Global Commons and Climate Change, Berlin)
- Renato Calzone (Ilustre Lab, Curaçao)
- Winston Chow (Singapore Management University)
- Priya L. Donti (MIT)
- Ian T. Foster (University of Chicago and Argonne National Laboratory)
- Maria Heuss (University of Amsterdam)
- Sanaa Hobeichi (UNSW Sydney)
- Evangelos Kanoulas (University of Amsterdam)
- Ana Lucic (Microsoft Research)
- Tanwi Mallick (Argonne National Laboratory)
- Veruska Muccione (University Zürich)
- Shruti Nath (University of Oxford)
- Anne Sietsma (Wageningen University and Research Centre)
- Damiano Spina (RMIT)
- Georgios Tsatsaronis (Elsevier)

5 TARGET AUDIENCE

The MANILA24 workshop brings together researchers and practitioners from academia, industry, and NGO's to identify and discuss core research problems in information retrieval for climate impact in the context of the IPCC Working Group II. The workshop aims to foster community building and agenda setting by bringing researchers from different backgrounds together in a way that rarely happens.

Similar to past workshops aimed at IR for social good, attendees are expected to include:

- Early-, mid-, and late-career researchers and practitioners in IR; and
- Researchers and practitioners in technology for climate impact in general, and IR and NLP for climate impact in particular.

ACKNOWLEDGMENTS

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