

Studying Sense-Making and Engagement of IPCC Climate Visualizations

Master 2 Internship

Vanessa Peña-Araya and María Jesús Lobo-Gunther
{vanessa.pena-araya@inria.fr, maria-jesus.lobo-gunther@ign.fr}

Internship period: starting in March/April 2025, 5 or 6 months duration.

Supervisors: Vanessa Peña-Araya and María Jesús Lobo-Gunther.

Location: ILDA, Université Paris-Saclay, building 660.

Website: <https://ilda.saclay.inria.fr/>.

1 Description

The Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental body of the United Nations that "provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation"¹. They regularly make reports publicly available on the latest scientific information to help for governments to develop climate policies.

The reports contain several visualizations aiming to better explain the scientific facts described in the text. However, these visualizations can be sometimes complex to understand for general audiences [1].

Internship Goal

The main goal of the internship is to explore the key challenges associated with creating IPCC products, particularly in developing visualizations tailored for general audiences. The activities undertaken during this internship will focus on addressing specific challenges and objectives faced by the authors of IPCC reports, as well as other stakeholders, in developing techniques for diverse communication needs. Therefore, the focus of the tasks will be on the information collected through interviews with individuals involved in the IPCC report creation process. Some examples include how to make interactive tools (e.g., the next version of the IPCC WGI Interactive Atlas²) or static visualizations (e.g., in the FAQ) easier to understand.

To do so, the internship will be divided in the following four tasks:

- Make a review of related work, such as previous studies on IPCC visualizations (e.g., [4, 3, 2]).
- Conduct interviews to IPCC report contributors to better understand their needs and problems.
- Analyze the results of these interviews and propose possible solutions from an HCI perspective.
- Depending on the results in the previous point, implement prototypes of possible solutions.

Requirements for Applicants: Basics of Information Visualization, user evaluation and prototyping methods. Any past experience in web development is a big plus.

If this internship is successful, it might be possible to continue this work through a PhD.

References

- [1] State of Climate Action 2021: Systems Transformations Required to Limit Global Warming to 1.5°C — wri.org. <https://www.wri.org/research/state-climate-action-2021>. [Accessed 28-10-2024].
- [2] H. Fischer, K. L. van den Broek, K. Ramisch, and Y. Okan. When ipcc graphs can foster or bias understanding: evidence among decision-makers from governmental and non-governmental institutions. *Environmental Research Letters*, 15(11):114041, 2020.

¹<https://www.ipcc.ch/about/>

²<https://interactive-atlas.ipcc.ch/>

- [3] J. Harold, I. Lorenzoni, T. F. Shipley, and K. R. Coventry. Communication of ipcc visuals: Ipcc authors' views and assessments of visual complexity. *Climatic Change*, 158(2):255–270, 2020.
- [4] R. Schuster, K. Gregory, T. Möller, and L. Koesten. “being simple on complex issues” – accounts on visual data communication about climate change. *IEEE Transactions on Visualization and Computer Graphics*, 30(9):6598–6611, 2024.