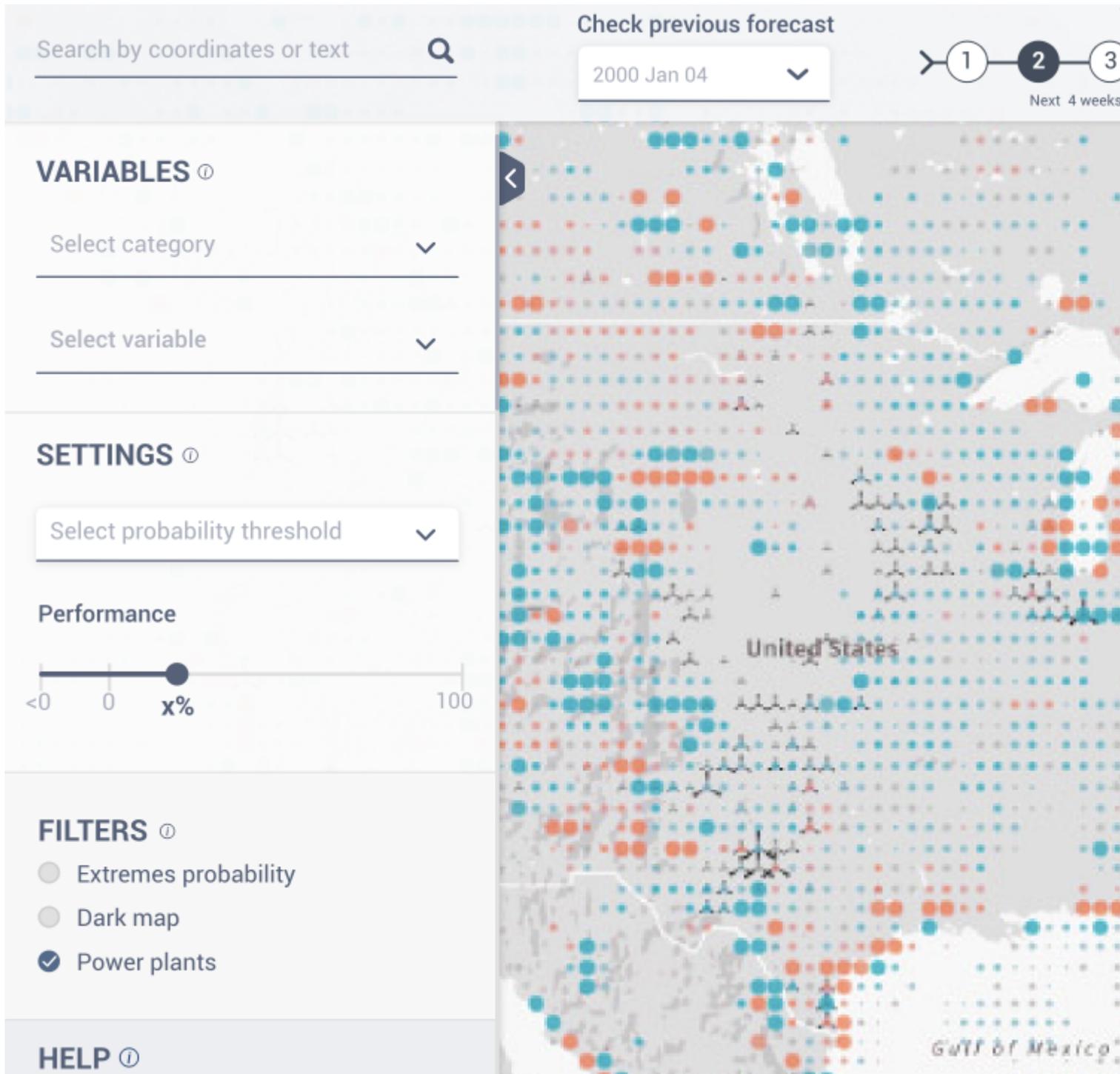


## Human Computer Interaction



Human computer interaction is performed in different ways and increasingly in more types of devices. The way we access information, process it, and communicate back with a machine should be done in an intuitive and convenient way to obtain a good user experience.

## Summary

HCI ( Human Computer Interaction ) studies the ways humans use digital or computational machines, systems or infrastructures. The study of the barriers encountered when users interact with the various interfaces is critical to improving their use, as well as their experience. Access and information processing is carried out today from multiple devices (computers, tablets, phones... ) which is essential to maintain a multi-channel consistency. This complexity increases with environments in which we do not have much experience as users, where interaction with the machine is a challenge even in phases of research: virtual reality environments, augmented reality, or viewing and handling of large amounts of data, where the simplicity and ease of use are critical.

In addition to focusing only on interaction, we pay special attention to the development process of applications and interfaces with a design focused on the end users.

Engaging the users from the point of product conceptualization, having a continuous feedback and an iterative process of continuous improvement makes our products and applications easier to use, especially when it comes to highly complex applications closely linked to research fields (medical , environmental , chemical , etc. )

The development process is based on an early stage of user research, in that they have the option to define and evaluate a prototype. When the prototype is validated, we start to develop the final application, performing tests with users to improve aspects still not controlled and reducing potential problems during development.

In addition to the design and conceptualization of new interfaces, we offer reviews and evaluations of interfaces and devices already created to improve their usability. We also pay special attention to usability focused on data visualization. In the era of big data often too much attention to the visual representation of data is paid regardless of whether it makes sense or is easy to process for the users that consume this information. Thanks to tools like the eye-tracker, we conduct usability studies of visualizations of complex data and the impact they have on end users.

## Objectives

- Create intuitive and easy to use data manipulation software
- Facilitate the analysis of complex quantitative information through interaction and visual representation
- Develop graphical software interfaces focusing on usability, user needs, and feedback
- Research and develop new forms of interaction between humans and computers, specially interactions with data visualizations

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