



Universität St.Gallen

Computer Science Insights @HSG - School of Computer Science

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A Human-Centered Perspective on Data-Centric Sensemaking

Laura Koesten

Data shape how we understand the world and make decisions. Yet their meaning is rarely apparent at first glance. Making sense of data requires people to organize, connect, and contextualize, often through representations that make patterns and relationships visible. This process is shaped by the interfaces through which people encounter data, influencing what they notice, how they interpret information, and which conclusions they draw. Through an HCI lens, my work examines how people with different levels of data literacy engage with data in both everyday and professional settings.

In this talk, I will present research on data-centric sensemaking, beginning with work on dataset summaries and conceptual data models as ways to surface different strategies people use to construct meaning, from staying close to the data itself to developing broader narratives. I will then turn to visualizations as a key interface through which people encounter, interpret, and make decisions with data. While widely used for communication, it is often unclear whether audiences understand visualizations as intended. Drawing on four years of research from my WWTF project, Talking Charts, I will present studies examining how different audiences interpret messages conveyed through visualizations and

how understanding can be assessed beyond measures of simple recall.

The talk connects these findings to wider HCI questions around Human-Data Interaction, explainability, and data communication, inviting reflection on how we might design tools that support more meaningful encounters with data.

Laura Koesten is Assistant Professor at Eindhoven University of Technology, The Netherlands; Visiting Scholar at the Mohamed Bin Zayed University of Artificial Intelligence, UAE (MBZUAI); and Senior Scientist at the Austrian Institute of Technology (AIT). Her research examines how people interact with and make sense of data and AI systems, with a focus on collaborative data work, data visualizations, data reuse and governance, and explainable AI. She received her PhD in Computer Science from the University of Southampton in collaboration with the Open Data Institute (UK). In 2024, she was awarded the Hedy Lamarr Prize in Austria for outstanding achievements in information technology.

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