



1st ed. 2018, XII, 184 p. 31 illus., 27 illus. in color.

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Geoffrey Ellis (Ed.)

# Cognitive Biases in Visualizations

- Provides an insight into how visual analytic systems, can provide effective support for mitigating key cognitive biases
- Assists readers with designing user studies to measure cognitive biases
- Includes a discussion of the interplay between human and system-induced biases
- Evaluates bias-reducing techniques in intelligence analysis
- Broadens your understanding of how cognitive biases can have a detrimental effect on decision making

This book brings together the latest research in this new and exciting area of visualization, looking at classifying and modelling cognitive biases, together with user studies which reveal their undesirable impact on human judgement, and demonstrating how visual analytic techniques can provide effective support for mitigating key biases. A comprehensive coverage of this very relevant topic is provided through this collection of extended papers from the successful DECISIVE workshop at IEEE VIS, together with an introduction to cognitive biases and an invited chapter from a leading expert in intelligence analysis. Cognitive Biases in Visualizations will be of interest to a wide audience from those studying cognitive biases to visualization designers and practitioners. It offers a choice of research frameworks, help with the design of user studies, and proposals for the effective measurement of biases. The impact of human visualization literacy, competence and human cognition on cognitive biases are also examined, as well as the notion of system-induced biases. The well referenced chapters provide an excellent starting point for gaining an awareness of the detrimental effect that some cognitive biases can have on users' decision-making. Human behavior is complex and we are only just starting to unravel the processes involved and investigate ways in which the computer can assist, however the final section supports the prospect that visual analytics, in particular, can counter some of the more common cognitive errors, which have been proven to be so costly.

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