

# **Data Visualization Recommendation: Literature Review and Future Perspectives**

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## **Abstract**

The constant growth in data generation, driven by technological advancement, highlights the need to organize information to extract relevant knowledge. In this context, visual representations emerge as effective tools to simplify this complex task. The automation of this process can be achieved through visualization recommendation systems. This work aims to improve the understanding of data visualization recommendations by synthesizing current literature to identify research gaps and outline initial requirements for developing prototypes and tools in this area. To achieve this, we conducted a systematic literature mapping from 2017 to 2023, followed by forward snowballing, through which we carefully selected and analyzed 60 papers on data visualization recommendations. We provide an overview of visualization recommendation systems, identifying employed techniques and categorizing studies based on different recommendation approaches. We also guide the selection of algorithms and methods for developing automatic and semiautomatic recommendation systems and present lessons learned and future research possibilities.

**Keywords:** visualization recommendation; data visualization; recommendation techniques; automatic visualization; machine learning-based recommendation.

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