

**Complex exam  
minor subject**

Visualization and its analytical methods

**Syllabus**

The purpose, the usage and the process of visualization and visual analytics. Data management, database technologies and data mining, respect to visual analytics. Spatio-temporal applications. Infrastructural and efficiency issues. Visualization of scalar, vector and tensor fields. Domain-modeling techniques. Cutting, selection, grid construction from scattered points. Data representation and analysis. Image and object order techniques. Information visualization. Interaction and navigation. One- and multivariate data, visualization of relations. Volume visualization, classification and clustering, dimensionality reduction. Correlation and multivariate analysis.

**Bibliography**

1. A. C. Telea: Data Visualization: Principles and Practice, A. K. Peters/CRC Press, 2014.
2. D. Keim, J. Kohlhammer, G. Ellis, F. Mansmann (szerk.): Mastering the Information Age - Solving Problems with Visual Analytics. Eurographics Association, 2010. URL: <http://www.vismaster.eu/wp-content/uploads/2010/11/VisMaster-book-lowres.pdf>
3. C. Ware: Information Visualization, Third Edition: Perception for Design (Interactive Technologies), Morgan Kaufmann, 2012.
4. M. O. Ward, G. Grinstein, D. Keim: Interactive Data Visualization, Foundation, Techniques, and Applications, A. K. Peters/CRC Press, 2010.
5. S. Few: Now You See It: Simple Visualization Techniques for Quantitative Analysis. Analytics Press, 2009.

**Compulsory subjects for this  
minor subject**

Information and Scientific Visualization

**Recommended subjects for this  
minor subject**

Visual analytics methods