Visual Analytics

Summer

(in German: Visual Analytics)

Module-ID: FIN-INF-120524

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
	6	Summer	starting at 1.	1 Semester	english	Master

Link:	LSF
Limited accessability:	true
Responsibility:	Bernhard Preim
Lecturer:	Bernhard Preim
Classes:	• Lecture *Visual Analytics* • Exercise class *Visual Analytics*
Applicability in curriculum:	- M.Sc. INF: Informatik - M.Sc. INGINF: Informatik - M.Sc. WIF: Informatik - M.Sc. DKE: Applied Data Science - M.Sc. DE: Methoden des Digital Engineering - M.Sc. DE: Methoden der Informatik - M.Sc. VC: Visual Computing

Intended learning outcomes:
Students ...

- know machine learning methods and the visualization of their results
- apply this knowledge to analyse financial and business data
- use statistical methods to improve visual analytics solutions
- can assess and compare clustering methods

Content:

- Introduction: Potential and applications of Visual Analytics
- Visual Analytics based on clustering
- Visual Analytics based on subspace clustering and biclustering
- Visual Analytics with decision trees
- Visual Analytics with association rules
- Scatterplot-based visualizations
- Visual Analytics of events sequences
- Interaktive und Kooperative Methoden von Visual Analytics
- Visual Analytics im Gesundheitswesen

Workload:
'- 56 contact hours + 124 h self study

Pre-examination requirements:	**Type of examination:**	**Teaching method / lecture hours per week (SWS):**
	Written exam, 2 hours	• 2 SWS Lecture • 2 SWS Exercise class

Prerequisites according to examination regulations:	**Recommended prerequisites:**
none	• Lecture Visualization • Knowledge of Data Analysis, for example Intelligent Data Analysis • Data Mining • Machine Learning • Artificial Intelligence

Media:	**Literature:**

• Powerpoint presentation • Whiteboard • Videos	• J. J. Thomas, K. A. Cook (Hrsg.): Illuminating the path: The research and development agenda for visual analytics. IEEE Computer Society 2005 • D. A. Keim, F. Mansmann, J. Schneidewind, J. Thomas, H. Ziegler: Visual analytics: Scope and challenges. Visual Data Mining, 2008 • Andrienko, N., Andrienko, G., Fuchs, G., Slingsby, A., Turkay, C., & Wrobel, S. (2020). *Visual analytics for data scientists*. Springer Nature. • Kohlhammer, J., Proff, D. U., & Wiener, A. (2018). *Visual business analytics: effektiver Zugang zu Daten und Informationen*. dpunkt. verlag.

Comments:

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