



ifis

Institut für Informationssysteme
Technische Universität Braunschweig

Information Retrieval & Web Search Engines

HW: Latent Semantic Indexing

Please note: even though the homework assignments are optional, you are encouraged to answer them, as they will help you prepare for your final exam. Solutions can be dropped off at the institute's homework mailbox located on Informatikzentrum 2nd floor, next to room 238. Please do not forget your **Matrikelnummer** and your **full name** on your solutions. Another alternative is to send your homework by email to: pinto@ifis.cs.tu-bs.de. Please write your solutions in English. **Due date:** before next lecture (11.05.2017).

1. Given a term-document matrix and after applying SVD on it, explain in your own words what are the semantics of the U, S and V matrices.
2. Explain what LSI achieves that the previous retrieval models we saw in the lecture were unable to do?
3. Explain why zeroing low singular values work when we are reducing the number of dimensions?
4. LSI also has interesting applications in automated document translation. Can you imagine why and how LSI can help here?