

Exercise

11

TUM Department of Informatics

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Dimensionality Reduction and Matrix Factorization

Problem 1:

Leslie: Votes 3 for Alien, 4 for Titanic.

Original space: $[0, 3, 0, 0, 4]$

To obtain the wanted concept space a projection from original space to concept space is needed.

(Script page 67)

$$P = A * V$$

$$P = [0, 4, 0, 0, 4] * \begin{bmatrix} 0.58 & 0 \\ 0.58 & 0 \\ 0.58 & 0 \\ 0 & 0.71 \\ 0 & 0.71 \end{bmatrix}$$

$$P = [1.74, 2.84]$$

This means Leslie will most likely favor the Titanic and Casablanca movies (score: 2.84) over the sci-fi genre (score: 1.74). She already rated Titanic which means she has already seen it, so Casablanca would be a good recommendation.

Appendix

We confirm that the submitted solution is original work and was written by us without further assistance.
Appropriate credit has been given where reference has been made to the work of others.

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