Generalizing Generalized Cores – An Analysis of Tag-Recommender Evaluation Procedures

Stephan Doerfel
University of Kassel
Wilhelmshöher Allee 73
34121 Kassel, Germany
doerfel@cs.uni-kassel.de

Robert Jäschke
L3S Research Center
Appelstraße 4
30167 Hannover, Germany
jaeschke@l3s.de

Abstract

Since the rise of collaborative tagging systems on the web, the tag recommendation task – suggesting suitable tags to users of such systems while they add resources to their collection – has been tackled. However, the (offline) evaluation of tag recommendation algorithms usually suffers from difficulties like the sparseness of the data or the cold start problem for new resources or users. Previous studies therefore often used so-called post-cores (specific subsets of the original datasets) for their experiments. In this paper, we generalize the notion of a core by introducing the new notion of a set-core – that is independent of any graph structure – to overcome a structural drawback in the construction of post-cores. We complement the theoretical results with a large-scale experiment in which we analyze different tag recommendation algorithms on different classes of cores on three real-world datasets.

1 Acknowledgements

Part of this research was funded by the DFG in the project “Info 2.0 – Informationelle Selbstbestimmung im Web 2.0”.