

Social network analysis provides several means to better understand the structure of the underlying social networks. This thesis is focused on the area of community detection in social networks. We discuss six of the main community detection algorithms and their hybrid variants involving a combination of rough and fine partitioning techniques. The text explains the measures used to quantify the detected communities' properties. For different problem sizes, the Zachary's karate club and Enron email datasets were used. Further, the work concentrates on experiments that provide performance assessment for the investigated methods. Based on the obtained results, we draw conclusions towards recommendations for a reliable usage of the findings in practice. At the same time, we aim to identify the appropriate number of communities in the data at hand since this is a parameter of many community detection algorithms. For the same reason, we also investigate whether non-hierarchical clustering algorithms could be used to form a sub-community hierarchy. All of the mentioned experiments were run by means of a community detection system CGAT - Config-based Graph Analysis Tool we developed and implemented as a part of the thesis.