Dr. Eick

**COSC 6335**

**L Group Homework Credit Task**

To present on Nov. 14, 2024

**APRIORI and Association Rule Mining**

a) Assume the APRIORI algorithm identified the following 7 4-item sets that satisfy a user given support threshold: **abcd, abce, abde, acde, acdf, acdg, bcde, and bcdf;** what initial candidate 5-itemsets are created by the APRIORI algorithm; which of those survive subset pruning?

b) What is the APRIORI property and where is it does APRIOR use it when creating frequent itemsets?

c) Assume the following frequent itemsets have been identified by APRIORI: {A,B},{A,C},{B,C}, {A,B,C}. How will those four frequent item set be used to create candidate association rules? How will be determined if a candidate association rule satisfies the confidence threshold?

**COSC 6335**

**M Group Homework Credit Task**

To present on Nov. 19, 2024

Fuzzy K-Means

1. Let us assume we run Fuzzy C-means (FCM) for K=2 and the centroid for cluster 1 is (1,1) and the centroid of cluster 2 is (2,3) and hyper parameter p is 2 and we use Manhattan distance; furthermore, point i is: (2,2). Compute the wi1 and wi2 for point i!

b) Assume we use FCM for 4 points and k=2 and the points and their weights are as follows:

Point 1: (0,0) with w11=1 and w12=0

Point 2: (3,3) with w21=0.7 and w22=0.3

Point 3: (8,9) with w31=0.1 and w32=0.9

Point 4: (12,13) with w41=0 and w42=1

Using the methods FCM uses, compute the centroid of cluster 2; give the formula and its vector. [4]