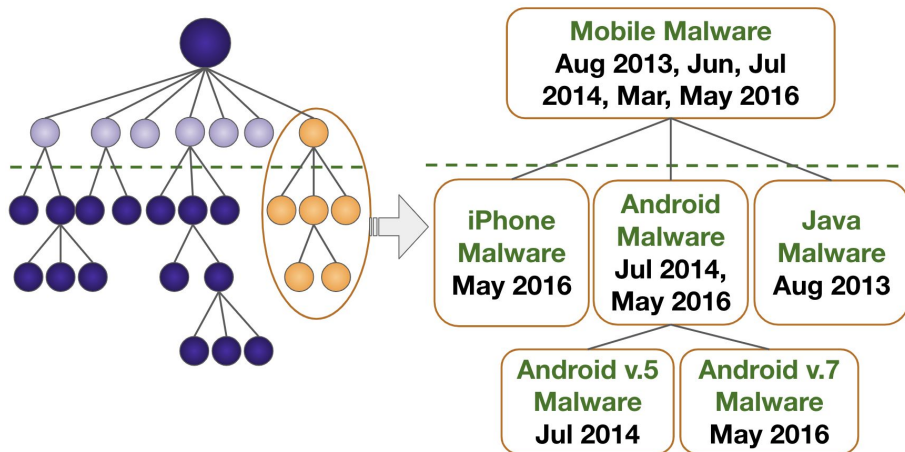


RecTen: Tensor-based Hierarchical Clustering



INPUT: TENSOR

OUTPUT: HIERARCHICAL CLUSTERS

PROBLEM DEFINITION

How can we expand the tensor decomposition to reveal a hierarchical structure of the multi-modal data in a self-adaptive way?

METHODOLOGY

1. Tensor decomposition for level 1 clustering.
2. Randomized point deletion from each cluster and repeat step 1.
3. Terminate when either cluster is small or rank = 1

SUMMARY

1. Novelty: Produce hierarchical clusters systematically.
2. Adaptive use: RecTen runs with both default and tunable parameters.
3. Evaluation: Outperforms baseline algorithms on both synthetic and real data.