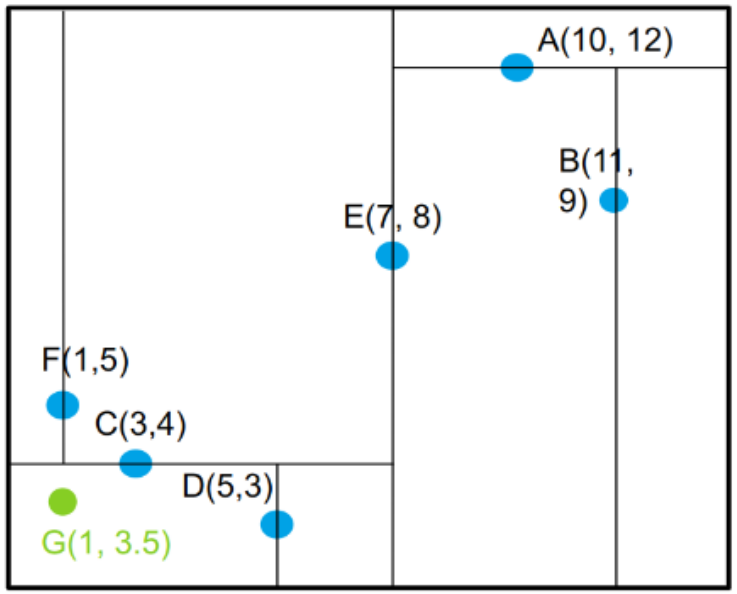
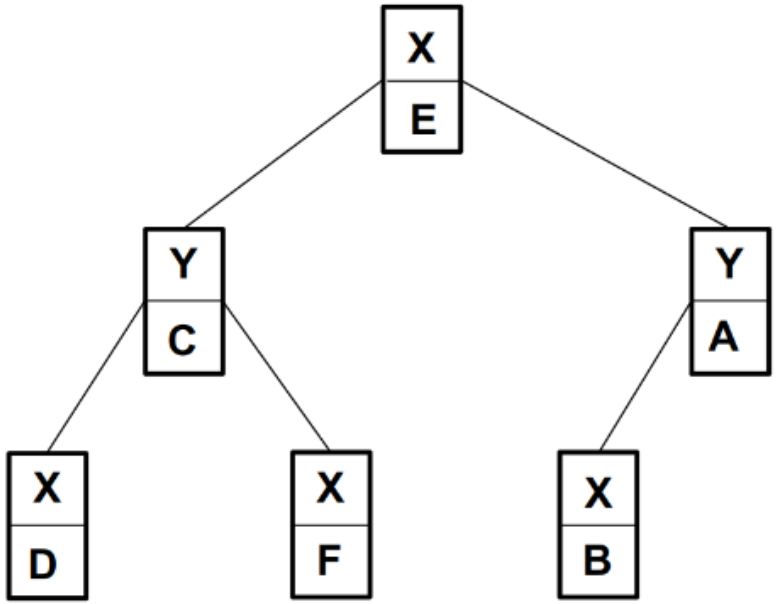
KD - Trees

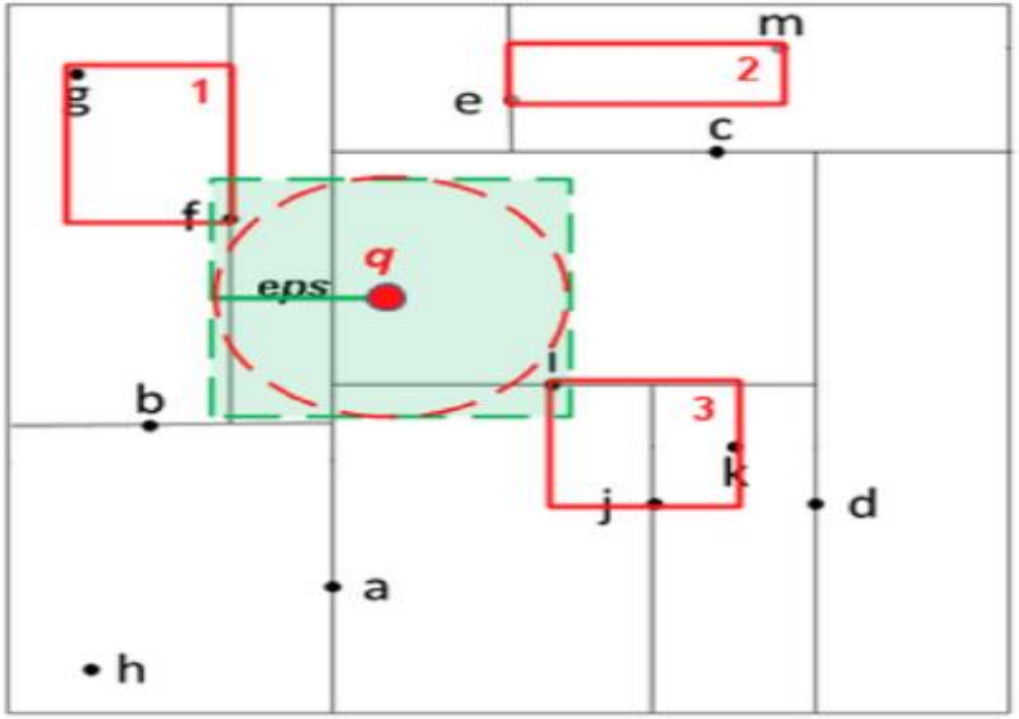


X

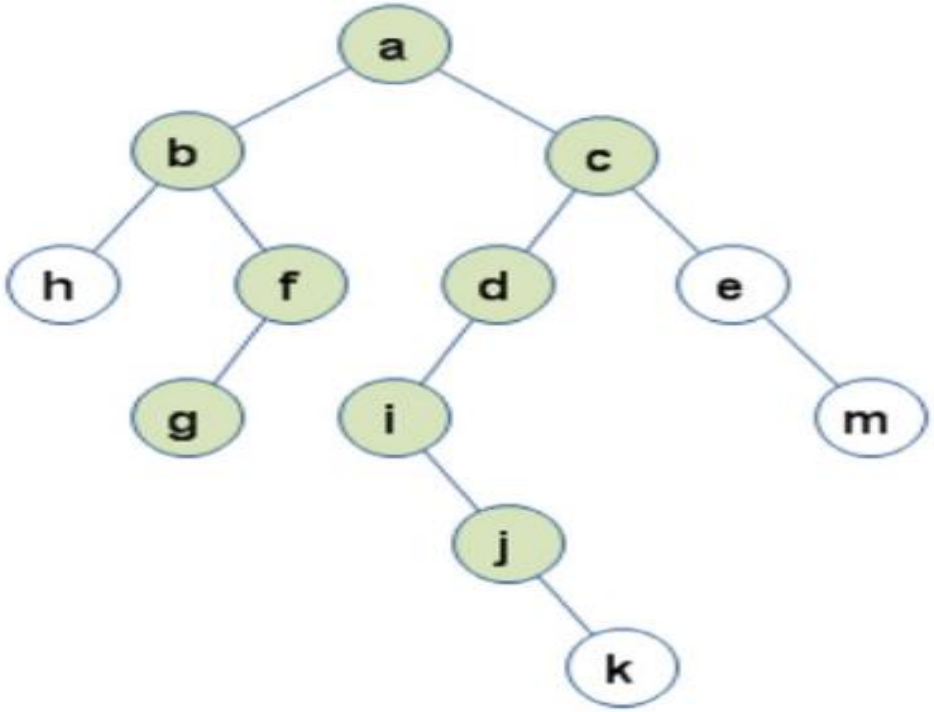


“

Partition trees are one of the most popular techniques for RNN and NN, they are used to recursively split the space into subspaces and organize the subspaces via a tree structure. Most approaches of this kind select hyper-planes or hyper-
spheres to partition the space and divide the data points into subsets, according to the distribution of data points.

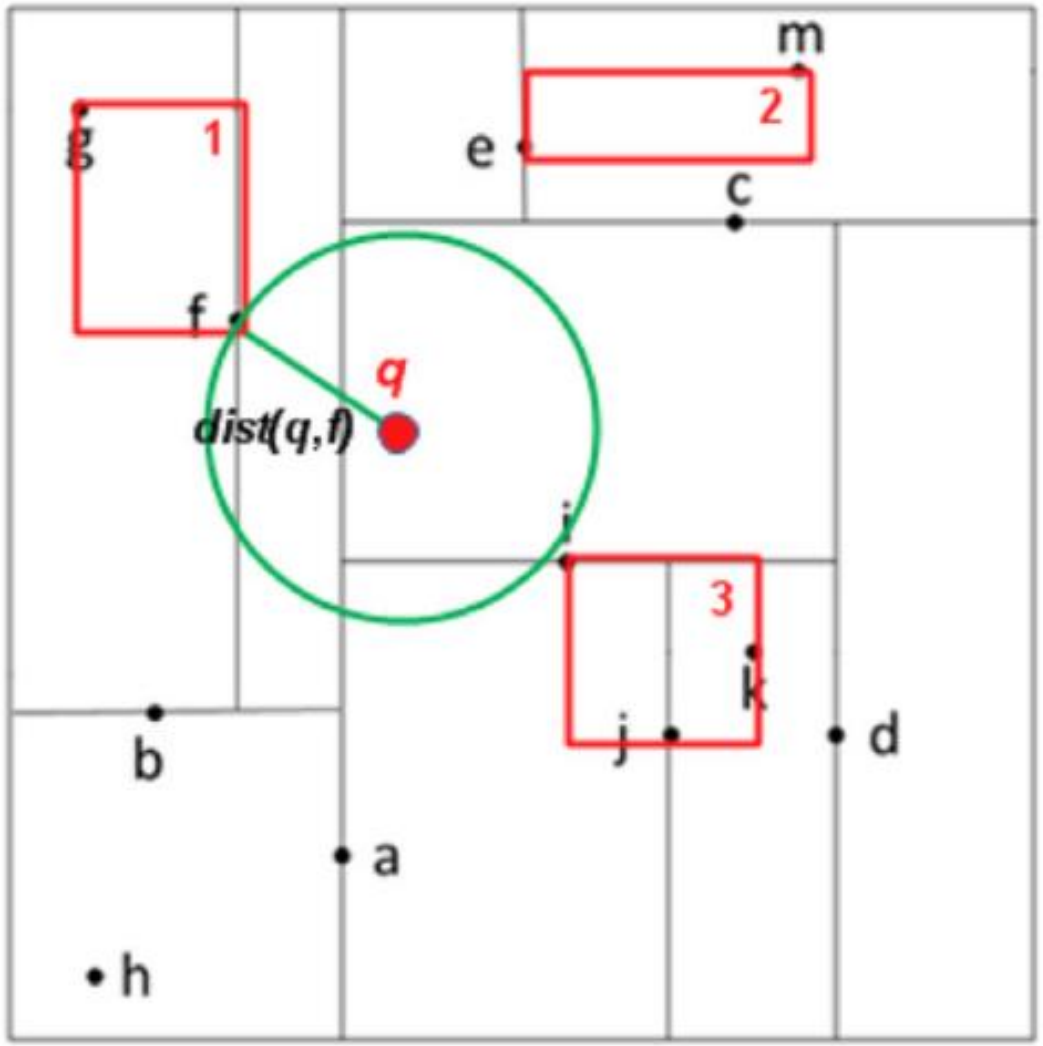


(a) subdivision



(b) structure

- The subdivision and structure of a k-d tree. In (a), the dashed red circle is Range(q, eps), the shaded green square is OutRange(q, eps), and each red
- rectangle represents the cell of a node. In (b) all shaded nodes should be visited.



- An example of searching nearest point to q. Node f is current best node, Range(q, dist(q, f)) intersect with the hyperplanes of i and j, but doesn't intersect with the cells of i and j.