

Problem: given a sample set $S = \{(1, 1), (2, 9.5), (3, 5), (4, 2), (5, 9), (7, 5.5), (8, 4), (9, 7), (10, 8)\}$, find the k-NNs of test point $(3.5, 5.5)$.

Building the tree: for each non-leaf node

- Choose dimension (e.g., longest hyperrectangle).
- Choose median as pivot
- Split node according to (pivot, dimension).

Balanced tree, binary space partitioning.

