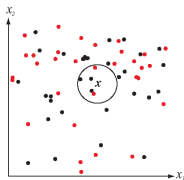


- ▶ The  *$k$ -nearest neighbor classifier* classifies  $\mathbf{x}$  by assigning it the label most frequently represented among the  $k$  nearest samples.
- ▶ In other words, a decision is made by examining the labels on the  $k$ -nearest neighbors and taking a vote.



**Figure 2:** The  $k$ -nearest neighbor query forms a spherical region around the test point  $\mathbf{x}$  until it encloses  $k$  training samples, and it labels the test point by a majority vote of these samples. In the case for  $k = 5$ , the test point will be labeled as black.