

Generalization for  $m$  intervals:

The "worst case" scenario for  $n$  points is an arrangement like



In this case, every point with the label "+" needs its own interval.

$\Rightarrow$  For  $n$  points you need  $\left\lceil \frac{n}{2} \right\rceil$  intervals.

$\Rightarrow$  The VC dimension for a hypothesis space consisting of  $m$  intervals is  $VC = \lceil \frac{m}{2} \rceil$