The Biblical Writings of Nick Halliwell

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intervals in $\mathbb{R}$: $VC = 2$

axis parallel rectanges in $\mathbb{R}^2$: $VC = 4$

circles in $\mathbb{R}^2$: $VC = 3$

triangles in $\mathbb{R}^2$ $VC = 7$

half spaces in $\mathbb{R}^n$: $VC = n + 1$

convex polygon: $VC = \infty$

axis parallel rectanges in $\mathbb{R}^3$: $VC = n + 1$

convex k-gon: $VC = (2k + 1)$ where k is the number of vertices

convex sets: VC = ∞

Disc in $\mathbb{R}^2$: $VC = 3$

rectangles in $\mathbb{R}^d$ $VC = 2d$
$S(A, n) \leq (\frac{n(n+1)}{2} + 1)^d < (n + 1)^{2d}$

convex polygon w/ d-vertices: $VC = 2d + 1$

closed balls in $\mathbb{R}^d$: $VC \leq d + 2$

squares in plane in $\mathbb{R}^2$: $VC = 3$

union of k closed intervals: $VC = 2k$

South west intervals in $\mathbb{R}^d$: A =$\{(-\infty, a_1] * (-\infty, a_2]... * (-\infty, a_j] : a_j \in \mathbb{R}\}$
$VC = d$

Class H_d of linear separators in $\mathbb{R}^d$
H_d =$\{x- > sign(w^T x = b)|w \in \mathbb{R}^d, b \in \mathbb{R}\}$
$VC = d + 1$

$h(x) = sign(\sum_{i=1}^{d} w_i \phi_i(x) + b)$ where $\phi : \chi- > \mathbb{R}^d$
$VC \leq d + 1$

Set of all linear functions in d variables: $VC = d + 1$

$\chi = \mathbb{R}^2$, $\mathbb{A}$ =$\{1_{x \in C}|$C is convex in$\mathbb{R}^2\}$
$VC = \infty$

Let $\mathbb{F}$ be an m-dimensional vector space of real valued functions. $\mathbb{H}$ =$\{1_{f(x) \geq 0}|f \in \mathbb{F}\}$, $VC \leq m$

Union of axis aligned rectangles and triangles in dimension 2: $VC = 12$ (axis aligned rectangles in dim $2 = 4$, vc dim of triangles is 7, $4 + 7 + 1 = 12$)

circle centered at origin: $VC = 1$

origin centered “bagels”: $VC = 2$