Basic Concepts of Classification

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1 Basic Concepts of Classification

A line is a set of points $\{\mathbf{x}|y(\mathbf{x}) = 0\}$ and it separates a plan into two half plan. If we assign one set $C_0 = \{\mathbf{x}|y(\mathbf{x}) > 0\}$ as a class C_0 and the other set is $C_1 = \{\mathbf{x}|y(\mathbf{x}) < 0\}$. If the points on the line $\{\mathbf{x}|y(\mathbf{x}) = 0\}$ are assigned as the sub set of the set C_0, then it becomes $C_0 = \{\mathbf{x}|y(\mathbf{x}) \geq 0\}$. A line $y(\mathbf{x}) = 0$ can be regard as a Linear Decision Boundery and $y(\mathbf{x})$ is a Discriminant Function in a two dimensional space.