

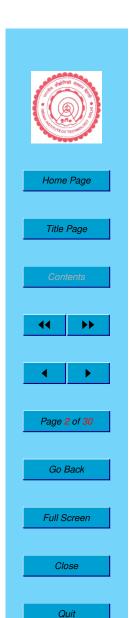
Linear Models for Regression and Classification

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Introduction

- Unsupervised Learning: Given points x₁,...x_N: N points in D— dimensional space.
 Aim: To cluster/group them/put them into clump-s/classes, given no other information
- Supervised Learning: Given points $x_1, ..., x_N$: N points in D- dimensional space, and target values/labels $t_1, ..., t_N$.

Aim of Regression: Prediction $t_i = y(\mathbf{x}_i, \mathbf{w}) + \varepsilon$, w: parameters, ε : noise (modelled/unmodelled) Aim of Classification: Labels $t_i \in \{0, 1\}$ or $\{-1, 1\}$ or multi-class: $\mathbf{t}_i = [0 \dots 010 \dots] \equiv \mathscr{C}_i$