Chapter 1 Anomaly Detection

1.1 Motivation

To tell something is working anomalously. The center is $p(x) < \epsilon$.

For example, it could be applied to fraud detection.

1.2 Gaussian Distribution

If x is a distributed Guassian with mean μ and variance σ^2, it's $x \sim N(\mu, \sigma^2)$

With Guassian Distribution, we can estimate a dataset:

$$\mu = \frac{1}{m}\sum_{i=1}^{m} x^{(i)}$$

$$\sigma^2 = \frac{1}{m}\sum_{i=1}^{m}(x^{(i)} - \mu)^2$$