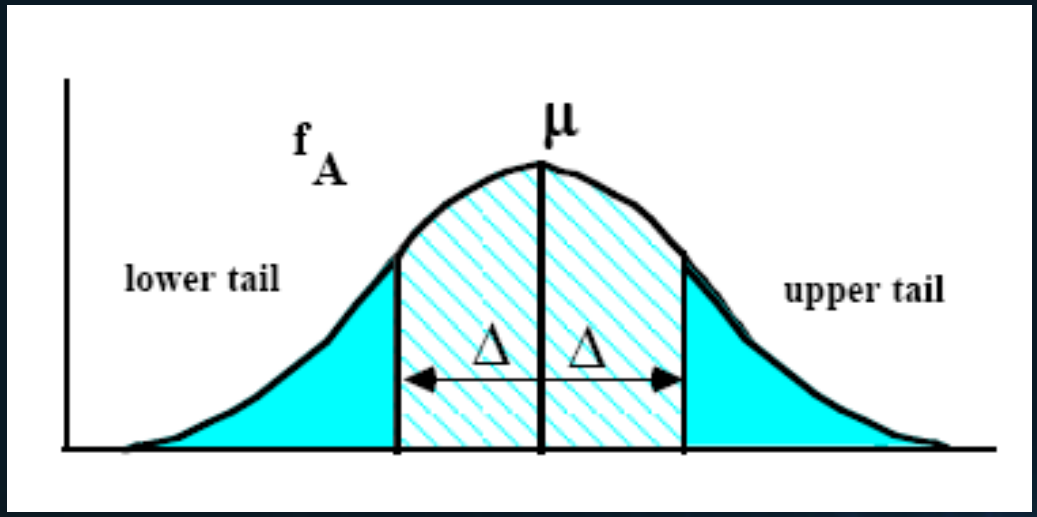
Probabilistic Inequalities

- For Random Variable A

$$mean \quad \mu = \overline{A}$$

$$variance \quad \sigma^2 = \overline{A^2} - (\overline{A})^2$$



Markov and Chebychev Probabilistic Inequalities

- Markov Inequality (uses only mean)

$$\text{Prob}\,(A \geq x) \leq \frac{\mu}{x}$$

- Chebychev Inequality

(uses mean and variance)

$$\text{Prob}\,(|A - \mu| \geq \Delta) \leq \frac{\sigma^2}{\Delta^2}$$