Random Variables and Probability Distributions Data Science and A.I. Lecture Series

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- $\bullet~X$ is a variable quantity behaving randomly, so we call it a random variable.

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X P(X)

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$$\begin{array}{c|c} X & P(X) \\ \hline 0 & 1/4 \\ \hline \end{array}$$

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X	P(X)
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• The cumulative distribution function (CDF) is:

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•
$$F(2) = P(X \le 2) = P(0) + P(1) + P(2) = 1$$

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- The PMF table was shown with overlay effects.
- The CDF gives cumulative probabilities.
- The probabilities sum to 1, ensuring a valid probability distribution.

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Thank You!

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