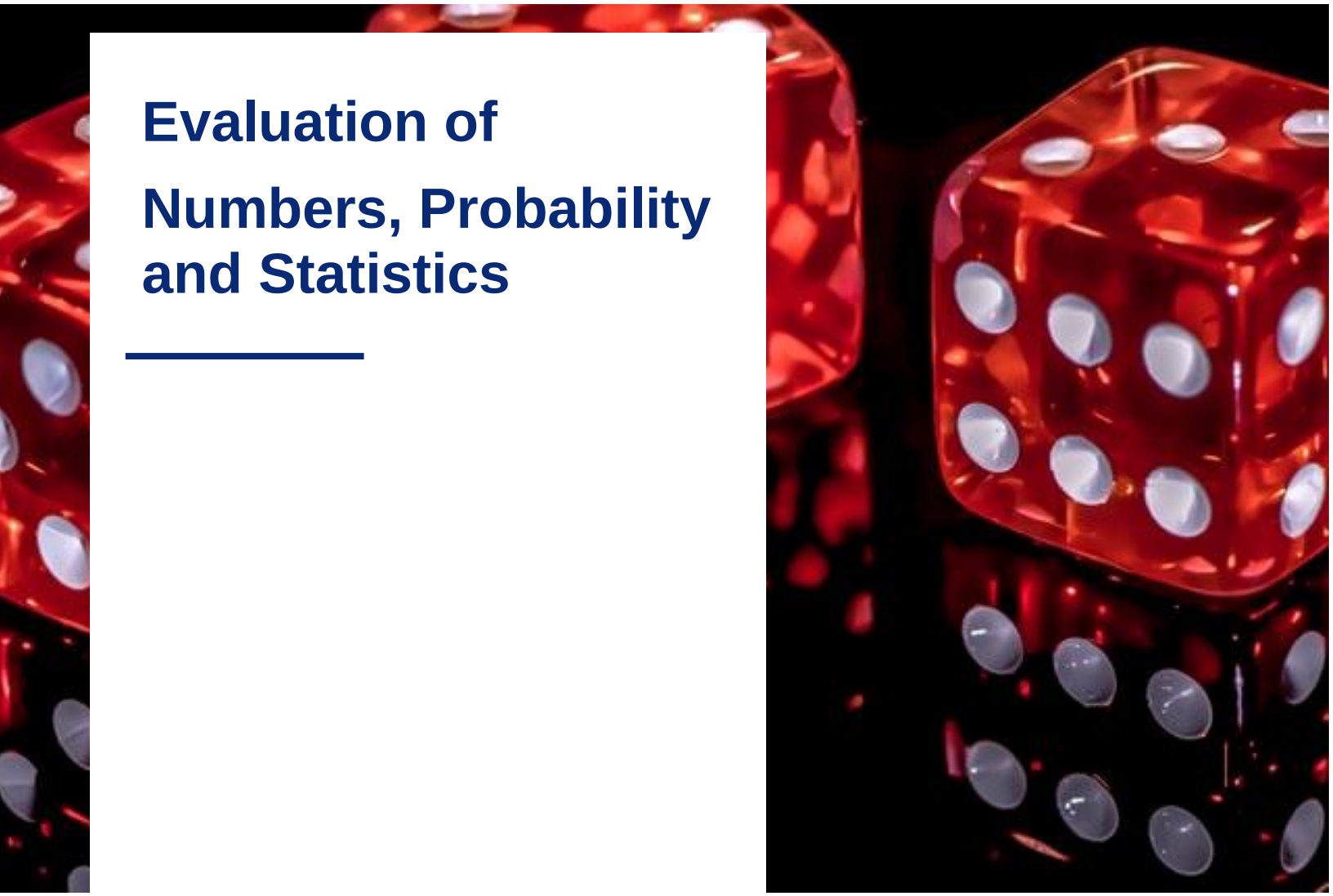
# Evaluation of

# Numbers, Probability and Statistics



JANUARY 24

**Data Science Engineering Methods and Tools**

**Prepared by: Manisha Bagora**

# History of Numbers, Probabilities and Statistics in different Civilization

## *Birth of Numbers:*

**Indian** mathematics emerged in the Indian subcontinent from 1200 BCE until the end up of the 18th century. The decimal number system in use today was initially noted in Indian mathematics. The Indians required a way to connect very large numbers, and so they designed a method of counting that could deal with very large numbers. It was they who created a distinct symbol for every number from one to nine. They are known today as Arabic numerals, but they would more properly be called Indian numbers, since it was the Indians who discovered them. The Indians have been utilizing "Arabic" numbers them since about 500 BC. Once zero was discovered it transformed counting, and mathematics, in a way that would transform the world. Zero is still considered India's greatest donation to the world. For the initial time in human history the concept of nothing had a number.

It was the **Egyptians** who changed the number one from a unit of counting things to a unit of gauging things. In Egypt around 3,000 BC, the number one became used as a unit of measurement to determine length. If you're going to build pyramids, temples, canals and obelisks you're going to need a standard unit of measurement — and an precise method of applying it to real objects. What they discovered was the cubit, which they thought to be a holy dimension.

**Greece** made further impacts to the world of numbers and counting, much of it under the supervision of Pythagoras.

***Probability:*** The concept of probability first evolved in connection with gambling. In 1654, a friend of Pascal posed him a problem that related to an unfinished game of dice. Pascal then consulted Fermat and their correspondence marks the efficient start of probability theory, which is at the heart of statistics. Their deliberations were not printed, but in 1657, Huygens made a document based on the conversations of Pascal and Fermat, the title of which changes to "On Reasoning in Games of Dice"

In 1812 Pierre de Laplace (1749-1827) introduced a host of new concepts and mathematical techniques in his book, Theory Analytique des Probabilities. Before Laplace probability theory was merely involved with evolving a mathematical analysis of games of possibility. Laplace applied probabilistic ideas to many scientific and practical questions. The theory of inaccuracies, actuarial mathematics, and statistical mechanics are examples of some of the vital applications of probability theory developed in the l9th century.

***Statistics:*** During the decades either side of the starting of the 20th century, the field of statistics developed quickly in parallel with exciting brand-new areas of research in Markov processes, set theory, quantum mechanics, relativity, and genetics. This speedy development is evident by the practical application and use of statistics in evolution and heredity by Pearson in 1894 and 1896 , Yule's correlation work in 1897, starter of the chi-squared test by Pearson in 1900 , founding of the journal Biometrika and Pearson's work on curve fitting both in 1901, publication of Elementary Principles in Statistical Mechanics by Gibbs in 1902 (38), nonlinear regression by Pearson in 1905 , beginning of Student's t-test by W.S. Gosset in 1908 , and Borel's Elements de la theorie des probabilities in 1909 .