



SNS COLLEGE OF ENGINEERING



Kurumbapalayam(Po), Coimbatore – 641 107

Accredited by NAAC-UGC with 'A' Grade

Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai

Department of Information Technology

Course Name – 23ADT202 Fundamental of Data
science and Analytics

II Year / IV Semester

Unit 1 – Introduction to Data science

Need for data science





Introduction to Data Science



Data Science combines statistics, programming, and domain knowledge to extract insights from data. It is crucial for making informed, data-driven decisions across industries.



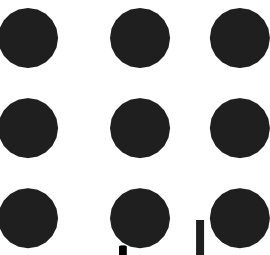
Data Explosion



Data is growing exponentially in today's world, with billions of data points created daily. The need to analyze this data has led to the rise of Data Science.



Importance of Data-Driven Decision Making



Data-driven decisions are more accurate and reliable compared to intuition-based choices. Companies leverage Data Science to optimize strategies and enhance business outcomes.



Data Science in Different Sectors



Data Science impacts various sectors, from healthcare (predictive analytics) to finance (fraud detection), improving efficiency and outcomes across industries.



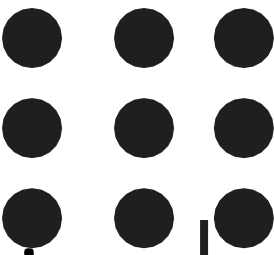
The Role of Machine Learning and AI in Data Science



Machine Learning and AI are core components of Data Science, enabling automated decision-making and predictive models, enhancing business intelligence.



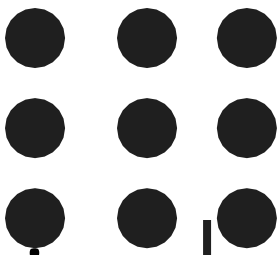
Data Science Skills and Tools



Essential skills for Data Scientists include programming, data cleaning, and machine learning. Tools like Python, R, and TensorFlow are widely used for data analysis.



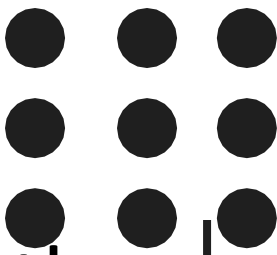
The Business Impact of Data Science



Data Science drives business value by improving operational efficiency, enhancing customer experience, and enabling data-based innovation in products and services.



Challenges in Data Science



Data Science faces challenges like data privacy concerns, poor data quality, and the complexity of analyzing large data sets, requiring skilled professionals.



The Future of Data Science



Data Science will continue to evolve with emerging technologies like AI and quantum computing, making it essential for future job markets and innovation.



THANK YOU