**Report: Evolution of Data Science**

**Name:** Nandani Deraiya  
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### **Introduction**

Data Science is a field that blends statistics, computer science, and domain knowledge to extract insights from data. It has grown rapidly due to the increase in data availability and technological advancements. Today, data science helps in making smarter business decisions, improving healthcare, personalizing recommendations, and much more.

### **Timeline of the Evolution of Data Science**

#### **1960s-70s: The Beginning**

* The roots of data science lie in statistics and computer science.
* Data analysis was mostly manual and handled by statisticians.

#### **1980s-90s: The Rise of Databases**

* Development of relational databases (like SQL).
* Growth of business intelligence tools and Excel.
* Companies started storing and organizing data more efficiently.

#### **2000s: The Term ‘Data Science’ Emerges**

* The phrase “Data Science” became more widely used.
* Businesses started collecting and analyzing big data.
* Programming languages like R and Python gained popularity.

#### **2010s: Machine Learning and Big Data**

* Huge data from social media, mobile, and web applications.
* Machine Learning (ML) algorithms used for predictions.
* Use of Hadoop, Spark, and cloud computing.

#### **2020s: AI and Automation**

* Artificial Intelligence (AI), Deep Learning, and AutoML tools become mainstream.
* Use of ChatGPT, image recognition, and voice assistants.
* Data science became accessible to non-programmers via tools like Power BI, Tableau, and Google AutoML.

### **Key Tools and Technologies Over Time**

* **Earlier Tools**: Excel, SQL
* **Modern Tools**: Python, R, TensorFlow, Jupyter Notebook, Power BI, Tableau
* **AI Tools**: OpenAI’s ChatGPT, Google BERT, AutoML, Hugging Face Transformers

### **Applications of Data Science Today**

* **Healthcare**: Disease prediction, drug discovery
* **Finance**: Fraud detection, stock price prediction
* **E-commerce**: Recommendation systems, customer behavior analysis
* **Education**: Personalized learning platforms
* **Agriculture**: Crop yield prediction, smart irrigation systems

### **Conclusion**

Data Science has evolved from simple statistical techniques to complex AI-powered systems. It plays a vital role in every industry today and continues to grow rapidly. As data continues to increase, the future of data science looks even more innovative and powerful.

### **References**

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3. IBM: The Journey of Data Science
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