SIKSHA O' ANUSANDHAN UNIVERSITY

(DEEMED TO BE UNIVERSITY)

Assignment No: 1

Topic: Report on history of AI (from 1900 – 2024)

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BRANCH: **COMPUTER SCIENCE AND ENGINEERING**

SECTION: **K (11)**

SUBJECT: **Introduction to Machine Learning**

SEMESTER: 7TH

Introduction to Machine Learning

Machine learning is a branch of artificial intelligence (AI) that focuses on the development of computer systems to identify patterns, make predictions, and improve performance over time without explicit programming.

History of AI: 1900 – 1950

1. **1900 – 1940**

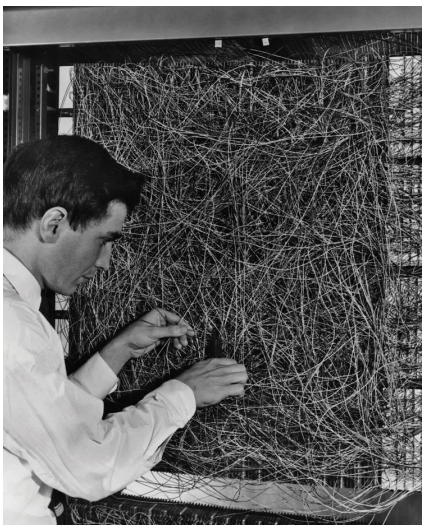
   Early concepts of AI emerged, but The field was limited by the lack of computing power and data.

2. **1950:** Alan Turing proposes “learning machine”.

3. **1952:** Arthur Samuel developed first machine learning program that could play Checkers.

4 **1957:** Frank Rosenblatt designed the **first neural network program**

Simulating human brain.



Picture on the right side:
Computer Scientist Frank Rosenblatt was developing the first neural network.

5 **1967:** Nearest neighbor algorithm created – start of basic pattern recognition.

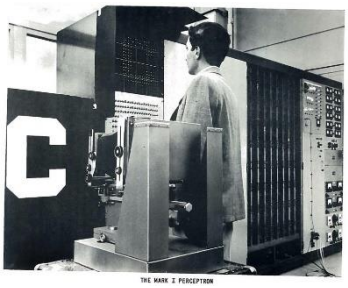
6 **1979:** Stanford University students developed **first self – driving cart** that can navigate and avoid obstacles in a room.

7 **1980:** Introduction of Backpropagation → The backpropagation algorithm was rediscovered, leading to advancements in neural networks.

The first self-driving car using backpropagation algorithm (an Indian developer), by *Mercedes-Benz*

8 **1980:** AI Winter → Reduced funding and interest in AI due to unmet Expectations and limitations of existing technologies.

The first AI winter in history of AI →



9 **1982: Recurrent neural network** was developed.

11 **1989: - Reinforcement Learning** conceptualized.

Beginning of commercialization of Machine Learning.

12 **1995: Random Forest** and **Support Vector machine** algorithms developed.

13 **1997: IBM's Deep Blue** beats the world chess champion Gary Kasparov.

14 **2000:** Rise of Machine Learning → Growth Hinton and others popularized deep learning leading to breakthroughs in image and speech recognition.

15 **2006:** Deep Learning Renaissance → Geoffrey Hinton and others popularized deep learning, leading to breakthroughs in image and speech recognition.

16 **2011:** IBM Watson wins on Jeopardy! → IBM's Watson beats human champions on the quiz show "Jeopardy!" using NLP and knowledge retrieval.

IBM Watson challenge in "Jeopardy!" 2011.

17 **2012:** Alex Net wins ImageNet competition → A deep Convolutional Neural Network (CNN) showed significant improvement in image recognition tasks.

18 **2014:** Google's DeepMind develops AlphaGo → AlphaGo became the first AI to defeat a professional human player in the game of Go, a complex board game.

19 **2016:** AlphaGo defeats Lee Sedol → AlphaGo defeated world champion Lee Sedol, demonstrating the power of deep learning and reinforcement learning.

20 **2018:** Bert by Google → Introduction of Bidirectional Encoder Representations from Transformers (BERT) for NLP tasks.

21 **2020:** OpenAI's GPT-3 → Release of a large language model with 175 billion parameters, showcasing significant advances in NLP.

22 **2022:** AlphaFold predicts protein structures → DeepMind's AlphaFold achieved breakthroughs in predicting protein folding, aiding biological research.

23 **2023:** OpenAI's GPT-4 → DeepMind's AlphaFold achieved breakthroughs in predicting protein folding, aiding biological research.

Conclusion:

AI has come a long way in just a few decades. Its impact on society, technology, and our daily lives continues to evolve rapidly. As we move forward, ethical considerations and responsible AI development will be critical.