History of Machine Learning

1. Rule based Systems (1950 to 1980)

Key Points:

1. Manually defined rules
2. No Learning from Data
3. Use IF Else Condition based approach

```python
def is_spam(email):
    if "lottery" in email.lower() or "free money" in email.lower():
        return "Spam Email"
    else:
        return "Not Spam"

# Test Cases
print(is_spam("Congratulations! You won a lottery!"))  # Output: Spam Email
print(is_spam("Hello, let's catch up for a meeting.")) # Output: Not Spam
```

Limitations:

1. Needed Human Experts to write rules
2. Could not handle real world uncertainty

2. Machine Learning (1980 to 2010)

Key Points:

4. Model learned patterns from structured data (csv,tabular data)

5. Required manual feature selection
6. Very good for structured data

A	B	C	D
Gender	Grade in 12	is_bachlour_pass	Job
Male	3.6	Yes	Yes
Male	3.54	No	Yes
Male	3	Yes	No
Female	2.57	No	Yes
Female	3.65	Yes	No
Female	3.23	No	Yes

Limitations:

3. Struggled with unstructured data (text,image, speech,video)
4. Need human to generate feature

3. Deep Learning (2010 to Present)

Key Points:

7. Model can handle Text,Image,Speech,Video
8. Model generate feature without human need
9. State of art accuracy

Limitations:

5. Need huge amount of Data
6. Need Powerful Hardware

4. **Breakthrough Moment (2017)**

    2017: Google Introduce Transformer architecture

    The Journey of AI Start from Transformer

5. **GPT 1 (2018)**
6. **GPT 2 (2019)**
7. **GPT 3 (2020)**
8. **GPT 3.5(2022)**
9. **GPT 4(2023)**
10. **O1 (2024) - Most powerful ai till today**
11. **Agent (2025)**

Other AI:

1. **Google Gemini**
2. **DeepSeek**
3. **Grok**
4. **Claude**
5. **Qwen**
6. **llama**