NLP/ASR

Unit 1: Introduction to NLP

1.1.2

Basics of NLP

History of NLP techniques

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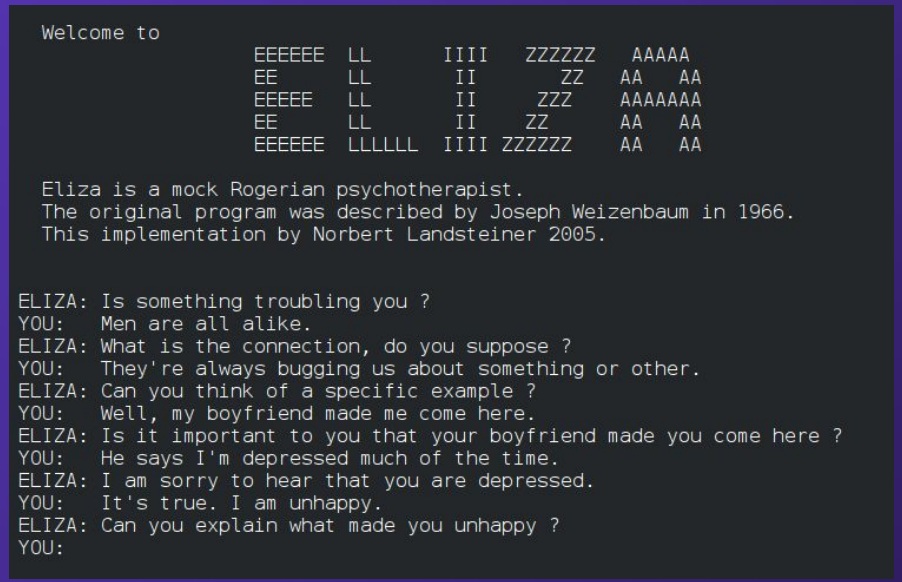
Rule-based Systems

- 1960s-1980s: The rise of rule-based systems
- Systems like ELIZA (1966) demonstrated early conversational ability
- Emphasis on hand-crafted linguistic rules and grammars
- Limitations in handling ambiguity and variability of natural language



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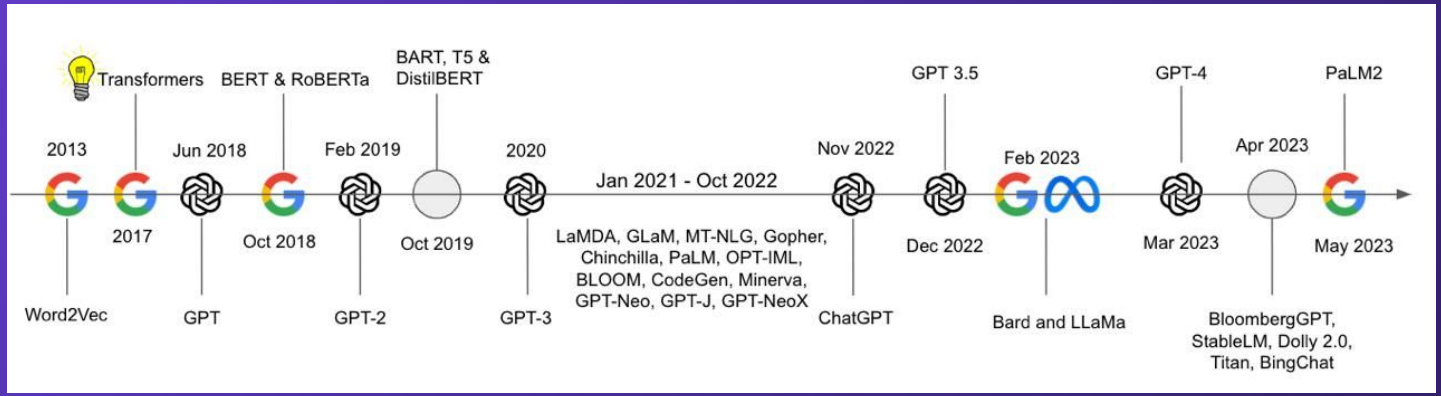
Rise of Statistical techniques

- 1990s: Advent of statistical and machine learning approaches
- Algorithms learned language patterns from large datasets (corpora)
- Techniques like Hidden Markov Models (HMMs) powered speech recognition

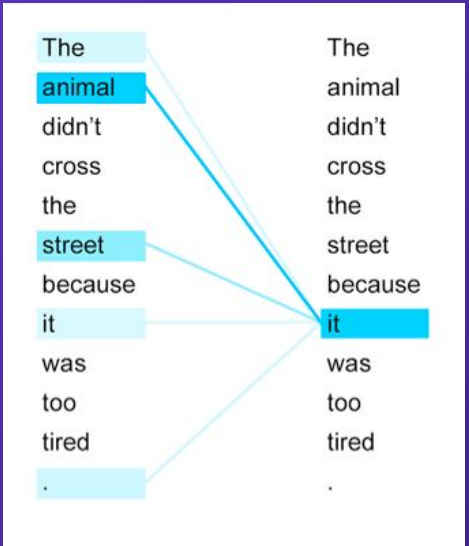
Deep Learning Era

- 2010s and beyond: deep learning transformed NLP
- Neural networks excelled at complex language tasks
- Breakthroughs in tasks like machine translation, question answering, and text generation



Transformer Revolution

- Introduced in 2017, Attention mechanism revolutionized NLP
- Transformers excel at capturing relationships between words in a sentence



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Future of NLP

- Pushing boundaries towards seamless human-like communication
- Addressing challenges like bias and explainability
- Potential for even greater personalization and contextual understanding