



# The evolution of natural language processing and its algorithms



- **1949:** IBM sponsors the **Index Thomisticus**, a compilation of the works of St. Thomas Aquinas created by the Italian Jesuit Roberto Busa (inventor of computer linguistics).



- **1950:** Alan Turing publishes the article *Computational machines and intelligence*, where he proposes the **Turing Test** to determine whether a machine can think or not.



- **1954:** The **Georgetown-IBM** experiment achieves the automatic translation of more than sixty sentences from Russian into English, giving a boost to computational linguistics.



- **1956:** John McCarthy, Marvin Minsky and Claude Shannon coin the term "**artificial intelligence**" at the Dartmouth Conference.



- **1960s:** **Pattern recognition** and "nearest neighbour" algorithms are introduced.



- **1980s:** **Machine learning** algorithms are introduced and natural language generation takes off.



- **1990s:** **Advanced speech recognition** and topic modelling technologies are introduced.



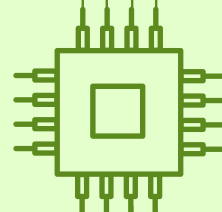
- **2000s:** More advanced statistical and topic models, such as LDA, are introduced. The term "**deep learning**" also emerged.



- **2010s:** Translation with **neural machines**, i.e. without human intervention, is implemented and conversational artificial intelligence takes a leap forward.



- **2020s:** More and more business sectors will apply this technology and, together with **machine vision**, it will enable the new challenges of Industry 4.0 to be met.



Source: Deloitte.