GOVERNMENT POLYTECHNIC COLLEGE,NANDED.
INFORMATION TECHNOLOGY ,DEPARTMENT

VISION

Become premier centre in the Information Technology with value based education that will prepare students for ever changing technological challenges of 21st century.

MISSION

M1: To train the students in the latest technologies.

M2: Provide an environment that inculcates ethics and effective soft-skills.

M3: Develop the skill sets among students that will benefit employer and society.

Program Educational Objectives (PEOs)

Become competent Information Technology engineer to work as a programmer or an administrator in a team or as an individual

Pursue higher studies in relevant field of engineering with a desire for lifelong learning

Become a successful professional with ethical and societal responsibilities

Program Specific Outcomes (PSOS)

Modern Information Technology: Use latest technologies for operation and application of information.

Information Technology Process: Maintain the information processes using modern information and communication technologies

Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems

Problem analysis: Identify and analyse well-defined engineering problems using codified standard methods

Design/development of solutions: Design scrutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs

Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate technique to conduct

standard tests and measurements

Engineering practices for soclety, sustainability and environment: Apply appropriate technology in context of society,

DeepLearning.AI

A COMPLETE GUIDE TO

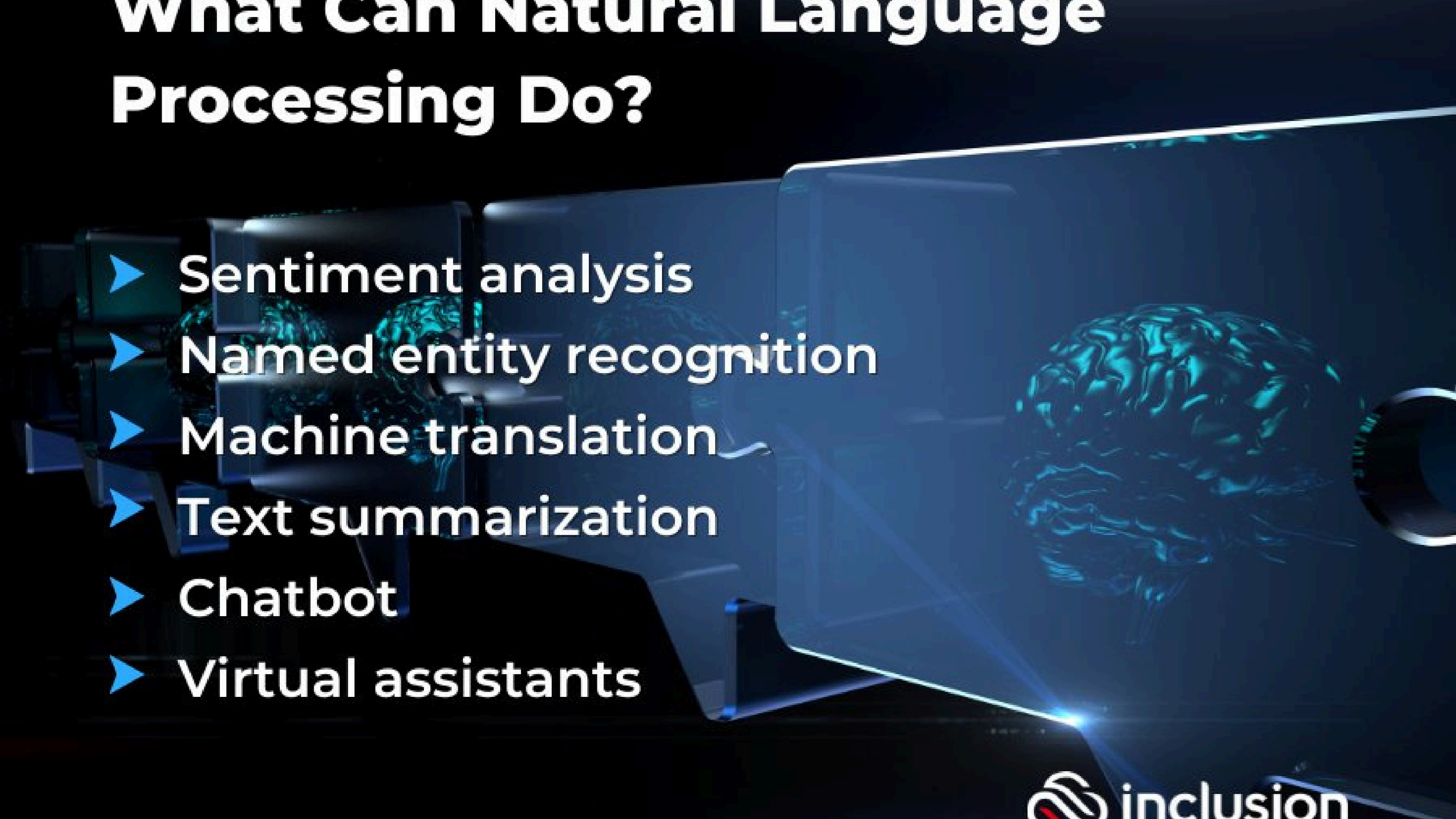
Natural Language Processing

Natural Language Processing

SoluLab

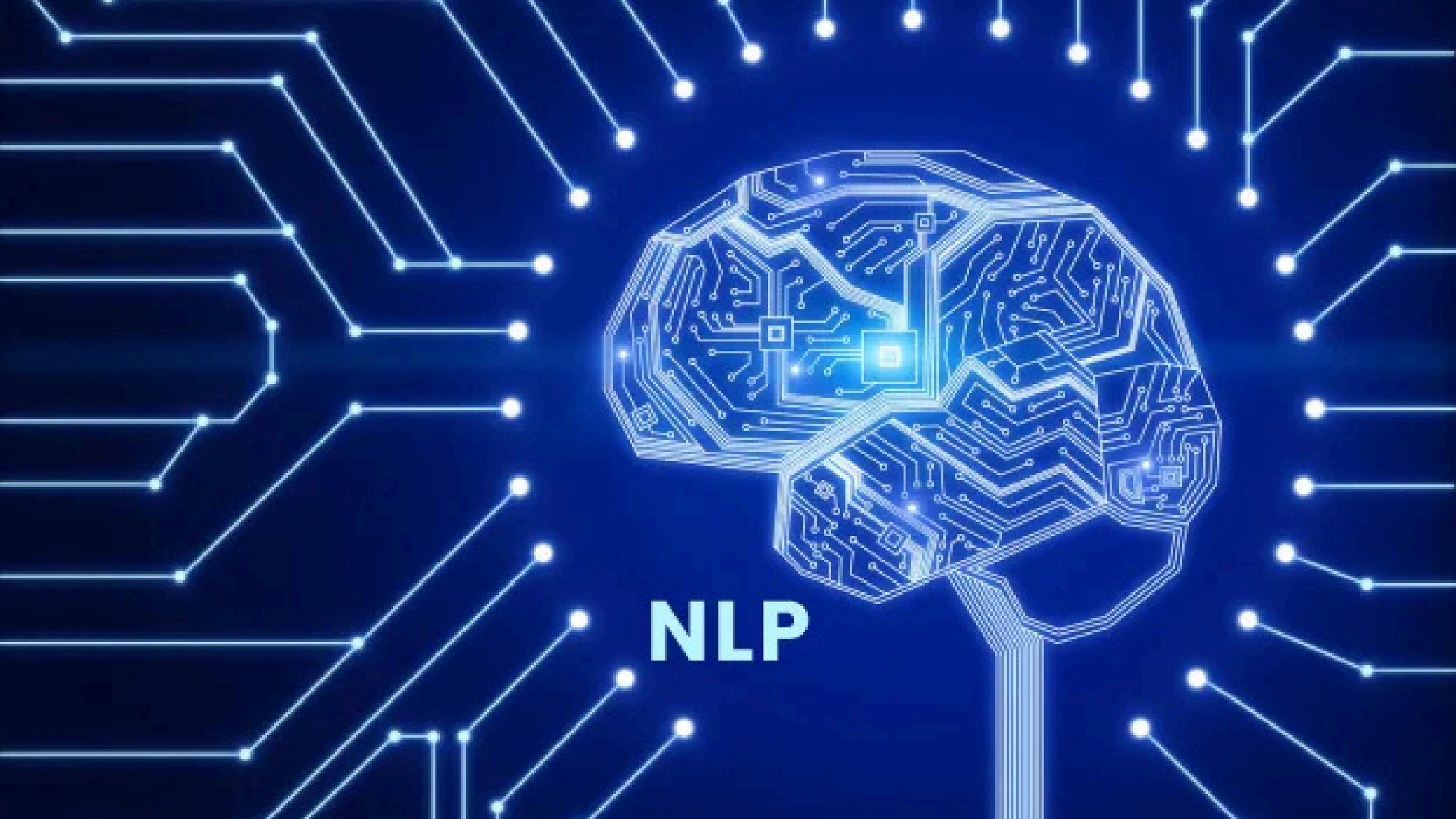
NLP is a field within artificial intelligence that enables computers to understand, interpret, and generate human language. It allows machines to process large amounts of natural language data, extract relevant information, and perform tasks such as language translation, sentiment analysis, and speech recognition.

What Can Natural Language Processing Do?



- Sentiment analysis
- Named entity recognition
- Machine translation
- Text summarization
- Chatbot
- Virtual assistants

inclusion


NLP

visually connects the concept of a "brain" (representing intelligence or cognitive processes) with circuit-like elements (representing technology or computing), and explicitly labels it "NLP," thereby illustrating the technological implementation of language processing capabilities.

Sentiment Analysis

Analyses text to understand the sentiments behind user conversation and messages. Perfect for organizations to study brand strategies and consumer behavior

Voice Analysis and Processing

Allows organizations to translate verbal commands into computer- based actions. It automatically identifies the user based on their voice

Entity Recognition

Identifies entities in the text and classifies them into different objects such as companies, persons, and products

Syntax Analysis

Analyses the grammatical structure of texts, splits them into parts to help understand patterns originating from it

Automatic Translation and Summarization

Key Challenges in Natural Language Processing (NLP)

01 Precision & Ambiguity

Interpreting context to reduce ambiguity

02 Tone & Inflection

Detecting sarcasm and emotional cues

03 Evolving Language

Adapting to new words and slang

04 Dialects & Accents

Handling diverse accents and regional speech

05 Bias in Data

Reducing unfair outcomes from biased data

06 Informal Language

Understanding slang and informal phrasing

datasciencedojo
data science for everyone

Precision & Ambiguity (01): Interpreting context to reduce ambiguity.

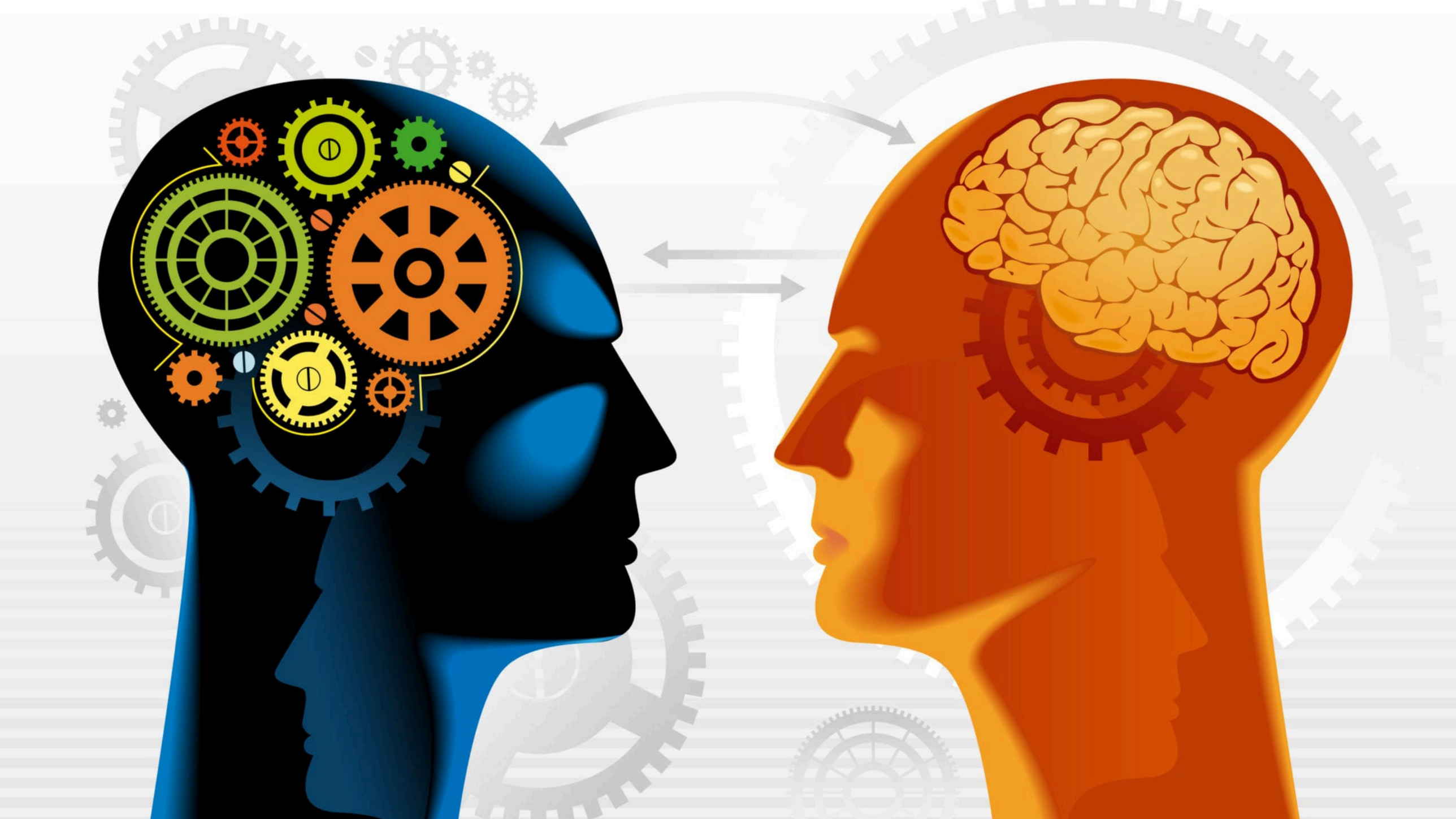
Tone & Inflection (02): Detecting sarcasm and emotional cues.

Evolving Language (03): Adapting to new words and slang.

Dialects & Accents (04): Handling diverse accents and regional speech.

Bias in Data (05): Reducing unfair outcomes from biased data.

Informal Language (06): Understanding slang and informal phrasing.



The brain is the most complex part of the human body. This three-pound organ is the seat of intelligence, interpreter of the senses, initiator of body movement, and controller of behavior. Lying in its bony shell and washed by protective fluid, the brain is the source of all the qualities that define our humanity.

Natural Language Processing


NLP
NATURAL
LANGUAGE
PROCESSING
AI
AI

Natural Language Processing (NLP) is a field within artificial intelligence (AI) that enables computers to understand, interpret, and generate human language. It combines elements of computer science, AI, and linguistics to facilitate communication between humans and machines.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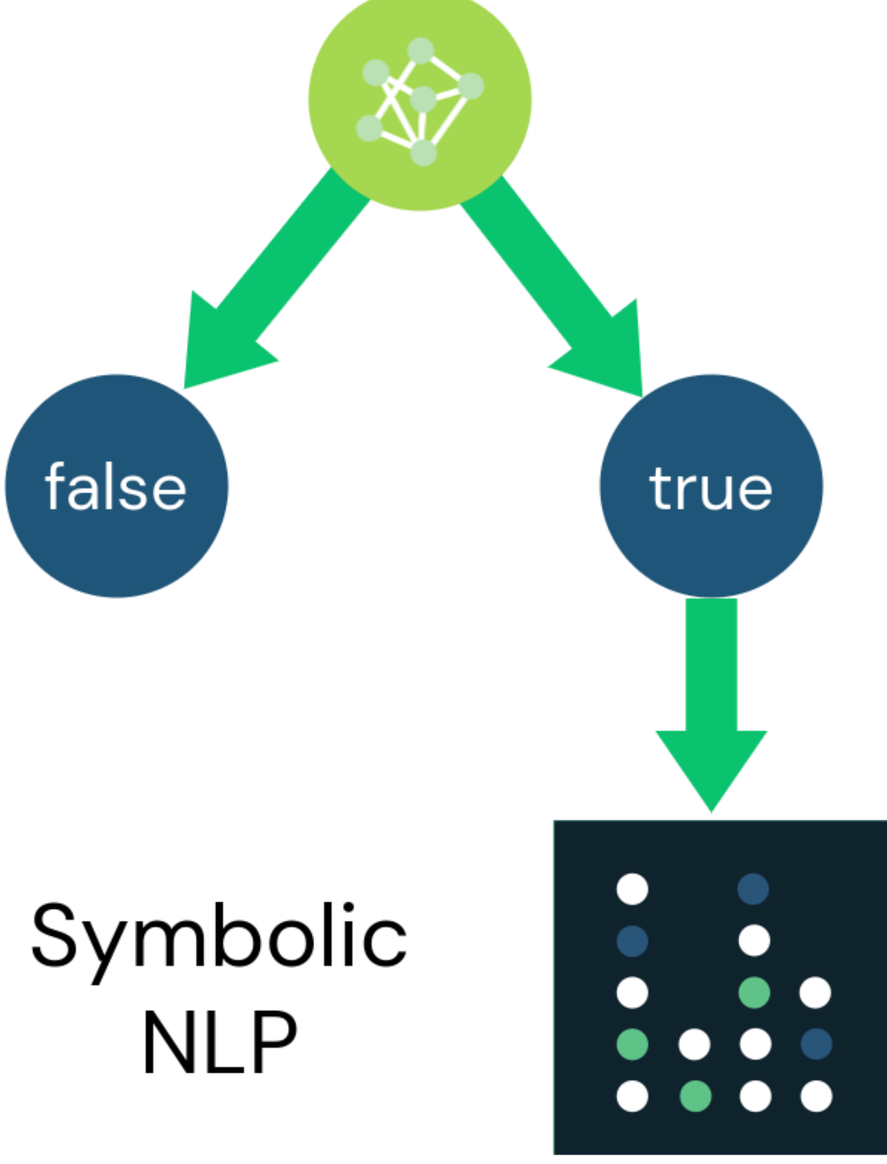
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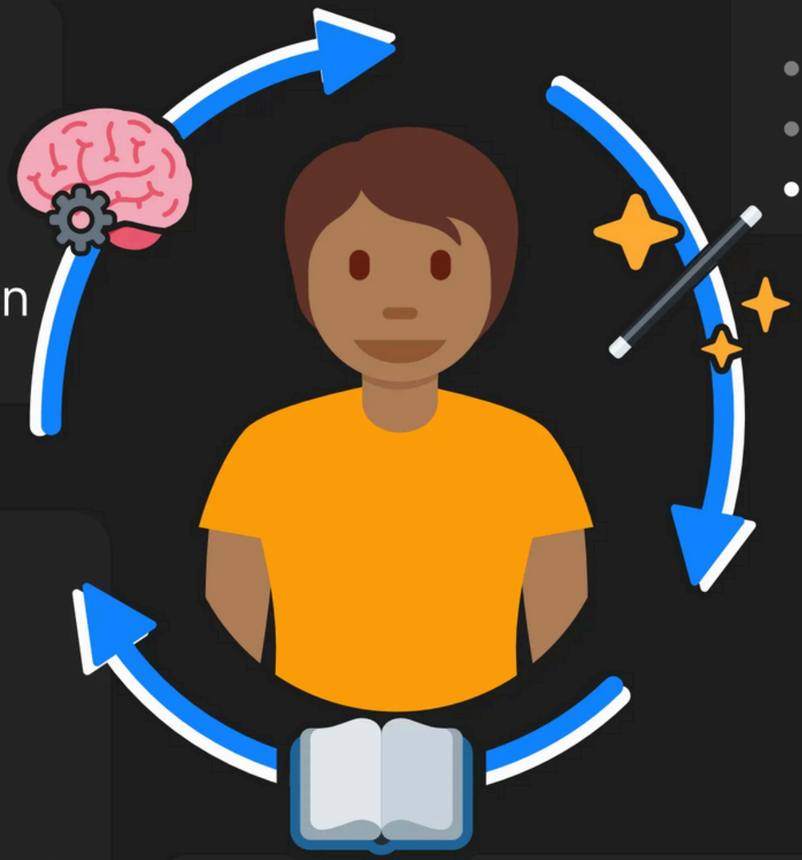
Symbolic
NLP

Putting Humans in the Natural Language Processing Loop: A Survey

Zijie J. Wang*, Dongjin Choi*, Shenyu Xu*, Diyi Yang * equal contribution

Task

- Text classification
- Parsing & Entity Linking
- Topic Modeling
- Summarization & Translation
- Dialogue & QA System



Goal

- Model Performance
- Model Interpretability
- Usability

Future Direction

- Feedback Evaluation
- Visualize Model Updates
- Help Users Provide Better Feedback
- Diverse User Background
- User Study to Evaluate the System
- Share Protocols, Tools, and Datasets

Interaction

- UI: Graphical User Interface
- UI: Natural Language Interface
- Feedback: Binary & Scaled
- Feedback: Natural Language
- Feedback: Counterfactual Example
- Intelligent Interaction

Update Method

- Data Augmentation: Offline Model Update
- Data Augmentation: Online Model Update
- Model Direct Manipulation

Georgia Tech

Sentiment Analysis

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Entity Recognition

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Syntax Analysis

Analyses the grammatical structure of texts, splits them into parts to help understand patterns originating from it

Automatic Translation and Summarization

Sentiment Analysis:

Understanding emotions and opinions expressed in text to analyze brand strategies and consumer behavior.

Voice Analysis and Processing:

Converting verbal commands into computer actions and identifying users by their voice.

Entity Recognition:

Identifying and classifying entities like companies, people, and products within text.

Syntax Analysis and Automatic Translation/Summarization:

Analyzing grammatical structure and enabling translation and summarization of complex texts

Natural Language Processing (NLP) is a branch of Artificial Intelligence (AI) that focuses on enabling computers to understand, interpret, and generate human language.

Natural Language Processing

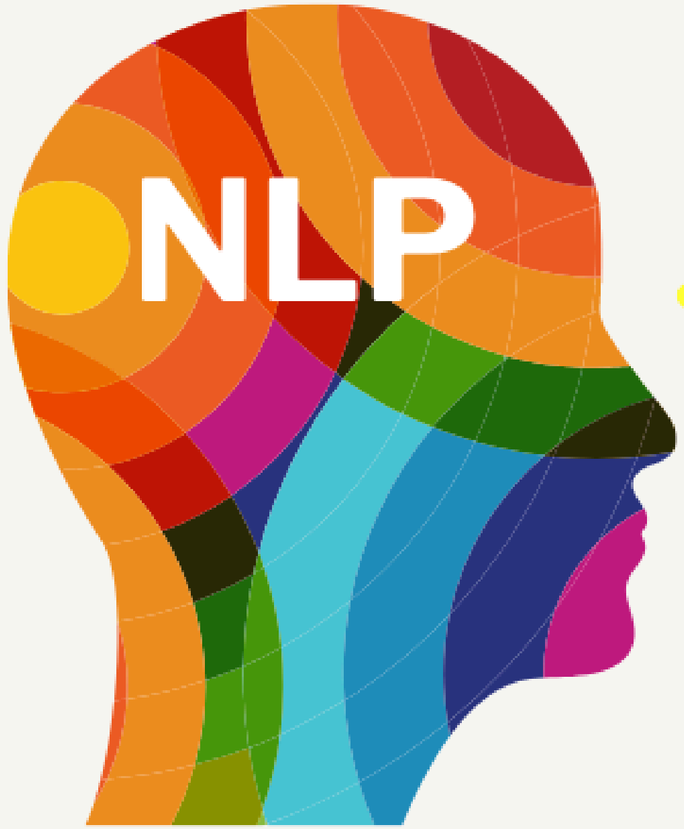
Natural Language Processing (NLP) is a sub-field of Artificial Intelligence that is focused on enabling computers to understand and process human languages, to get computers closer to a human-level understanding of language.

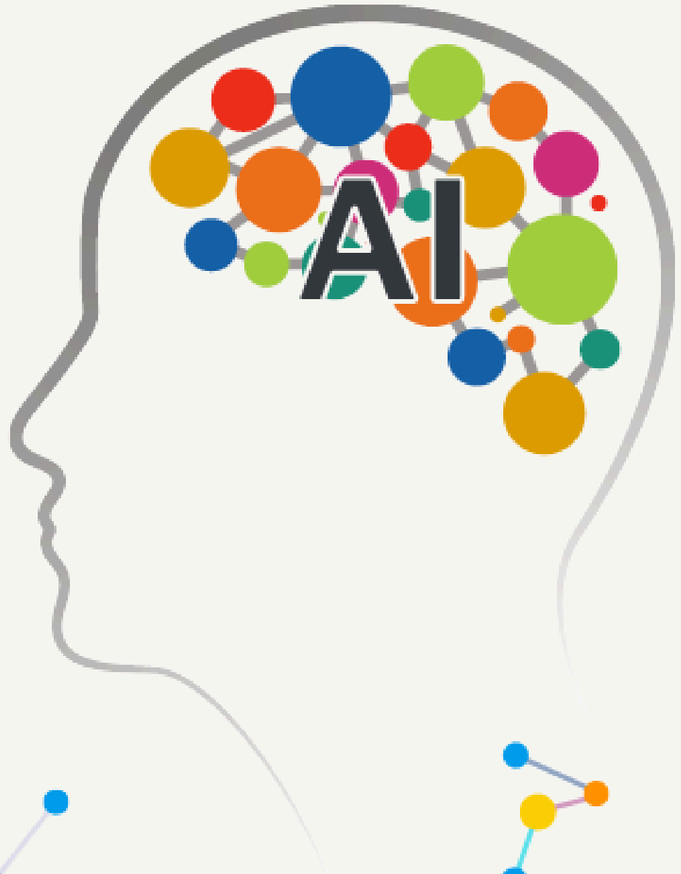

NLP
Natural
Language
Processing
Ai

Artificial Intelligence (AI) and Natural Language Processing (NLP)


NLP

Natural Language Processing (NLP) is a branch of Artificial Intelligence (AI) that focuses on enabling computers to understand, interpret, and generate human language. It combines elements of computer science, linguistics, and machine learning to bridge the gap between human communication and computer understanding.


NLP


AI

Natural Language Processing

DEPARTMENT: INFORMATION TECHNOLOGY

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