

Introduction to Natural Language Processing

Applications of AI

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Agenda

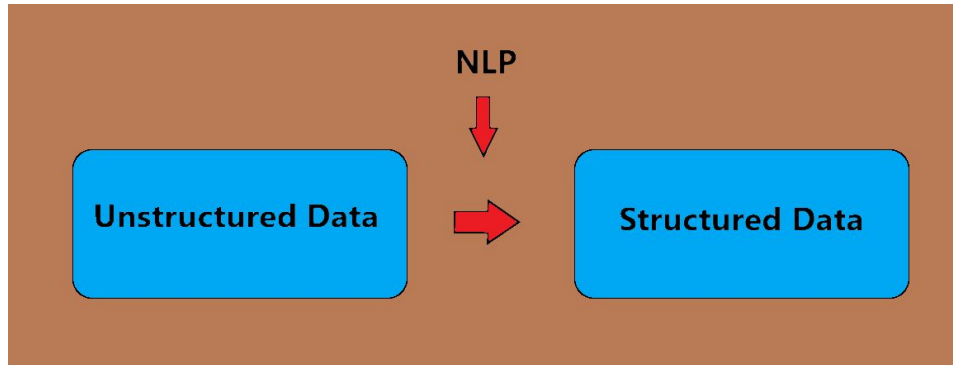
- Intro to NLP
- Application of NLP
- Text Mining
- Chatbots

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

What is NLP?

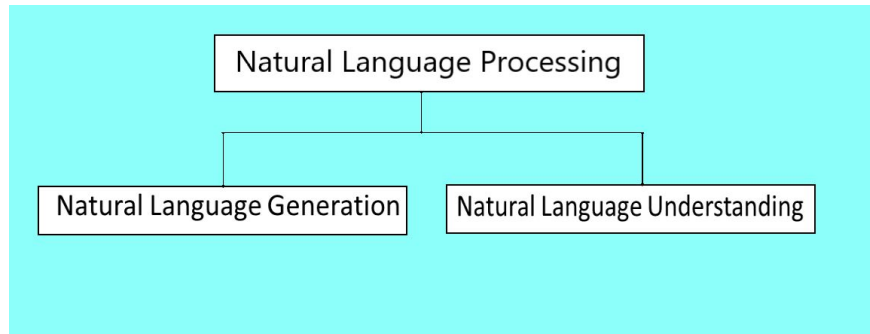
NLP aids machines in reading text (or another form of input such as speech) by simulating the human ability to understand a natural language such as English, Spanish, or Chinese.



This file is meant for personal use by amitava.basu@gmail.com only.

Types of NLP?

Natural Language Processing consists of both Natural Language Generation and Natural Language Understanding, which simulates the human ability to create natural language text. Example - to take part in a dialogue or summarize information.



This file is meant for personal use by amitava.basu@gmail.com only.

Applications of NLP

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Speech Recognition

Converting spoken words into data:

- Alexa
- Cortana
- Google Assistant
- Siri

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Machine Translation

Translating texts from one language to another.

Example:

- Google Translator
- Microsoft Translator

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Sentiment Analysis

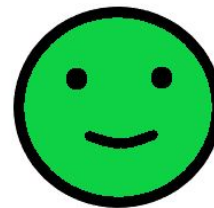
Interpreting basic Information from languages and check whether comments are positive or negative.



Negative



Neutral



Positive

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Example of Sentiment Analysis – Amazon Comprehend

Entities | Key phrases | Language | PII | **Sentiment** | Syntax

Analyzed text

Hello Zhang Wei, I am John. Your AnyCompany Financial Services, LLC credit card account 1111-0000-1111-0008 has a minimum payment of \$24.53 that is due by July 31st. Based on your autopay settings, we will withdraw your payment on the due date from your bank account number XXXXXX1111 with the routing number XXXXX0000.

Your latest statement was mailed to 100 Main Street, Any City, WA 98121.

After your payment is received, you will receive a confirmation text message at 206-555-0100.

If you have questions about your bill, AnyCompany Customer Service is available by phone at 206-555-0199 or email at support@anycompany.com.

▼ Results

Sentiment

Neutral

0.98 confidence

Positive

0.00 confidence

Negative

0.01 confidence

Mixed

0.00 confidence

► Application integration

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. © Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Named Entity Recognition

Identification of named entities (people, places, organizations, etc.) from input text is known as Named Entity Recognition.



This file is meant for personal use by amitava.basu@gmail.com only.

Named Entity Recognition - Amazon Comprehend

Analyzed text

Hello Zhang Wei, I am John. Your AnyCompany Financial Services, LLC credit card account 1111-0000-1111-0008 has a minimum payment of \$24.53 that is due by July 31st. Based on your autopay settings, we will withdraw your payment on the due date from your bank account number XXXXXX1111 with the routing number XXXXX0000.

Your latest statement was mailed to 100 Main Street, Any City, WA 98121.

After your payment is received, you will receive a confirmation text message at 206-555-0100.

If you have questions about your bill, AnyCompany Customer Service is available by phone at 206-555-0199 or email at support@anycompany.com.

▼ Results

Q Search

<12>

Entity	Type	Confidence
Zhang Wei	Person	0.99+
John	Person	0.99+
AnyCompany Financial Services, LLC	Organization	0.99+
1111-0000-1111-0008	Other	0.99+
\$24.53	Quantity	0.99+
July 31st	Date	0.99+

This file is meant for personal use by amitava.basu@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

NLP to read News - IBM Watson News Explorer



Image source: <https://news-explorer.mybluemix.net/?query=Harvard%20University&type=unconstrained>

This file is meant for personal use by amitava.basu@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

NLP to summarize articles - Inshorts

[Read Now](#)[Careers](#)[Blog](#)

Stay informed in 60 words.

We understand you don't have time to go through long news articles everyday. So we cut the clutter and deliver them, in 60-word shorts. Short news for the mobile generation.



Image source: <https://inshorts.com/>

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. © Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

NLP to summarize articles - Inshorts (Cont.)

- NLP is used to automatically condenses a news article down to 60 words.
- Inshorts editors summarised more than half a million articles over a five-year period to develop an algorithm that summarises more than 100K articles per month.

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

What is Text Mining?

The process of extracting useful patterns and insights from unstructured text is known as text mining.

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Applications of Text Mining

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Risk Management

In the Financial industry, Risk Management Software based on text mining technology can drastically improve risk mitigation.

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Fraud Detection through Claims Detection

With the help of text mining technologies, insurance companies are preventing fraud and processing claims more quickly by combining the results of text analysis with structured data.

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.

Thank You!

This file is meant for personal use by amitava.basu@gmail.com only.

Proprietary content. ©Great Learning. All Rights Reserved. Unauthorized use or distribution prohibited.