

# NLP intro

## ...and it's applications

Чувакин Сергей

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# Outline

Breif history

Steps for processing

Language models

Sintiments and topics

Chatbots



## NLP per se

- 1900s Saussure
- 1950s Turing
- 1957s Chomsky
- 1966 - 1980ss ai winter
- 1990s ~ n-grams, lstm, language models, etc.

## NLP tasks

- **Content Categorization:** A linguistic document summary that includes content alerts, duplication detection, search, and indexing.
- **Topic Discovery and Modeling:** Captures the themes and meanings of text collections, and applies advanced analytics to the text.
- **Contextual Extraction:** Automatically pulls structured data from text-based sources.
- **Sentiment Analysis:** Identifies the general mood, or subjective opinions, stored in large amounts of text. Useful for opinion mining. [click here](#).

## NLP tasks

- **Text-to-Speech and Speech-to-Text Conversion:** Transforms voice commands into text, and vice versa.
- **Document Summarization:** Automatically creates a synopsis, condensing large amounts of text.
- **Machine Translation:** Automatically translates the text or speech of one language into another.

[click here](#)

# Processing steps

- data obtaining
- stemming\lemmatization
- vectorization (bow, tf-idf, word2vec)
- modeling



# Language models

Probability of word given the previous.

- Probabilistic models
- RNN, LSTM
- word2vec



## Sintiments and topics

- Text classification.
- Recommendation Systems.
- Uncovering Themes in Texts.





# Chatbots

- Goal-oriented (FAQ bot).
- Convesational (Алиса, Siri).
- NLU + text generation.