

EasyAI

An introductory class to Artificial Intelligence
for translators, interpreters and linguists



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Preliminary considerations



Digitalization

- Artificial Intelligence and ICT are advancing at **exponential speed**
- Many tasks can be fully or partially **automated**, also in the language domain
- Technological change is not a 1-time event, but an **ongoing process**

Professions

- Embracing **digital transformation** is requested to remain relevant
- The entire **ecosystem** in which professionals operate is changing
- Changes will continue to be **disruptive**

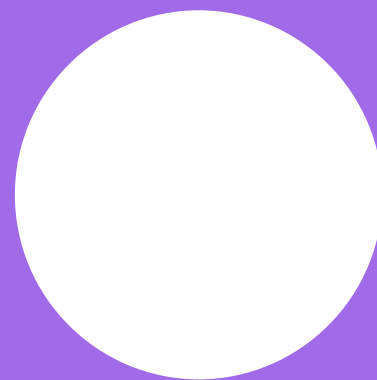
Training

- Professional training is still partially focused on **past models** of work and employability
- Align training to the **challenges** of a changing world is difficult
- What we teach today (skill-based) is irrelevant tomorrow



Future professionals need the ability to (among others)

- **make decisions** around technology use
- **actively adapt** to future changes
- **make sense** of their role in a changing world

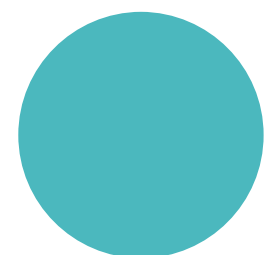


This requires a deep understanding of technological innovation, not the use of applications.

The EasyAI project

- Small scale project initially supported by University of Mainz
- 6 months of support: April-September 2022
- 3 team members
- Open Access:
www.easyai.uni-mainz.de

Main goals of EasyAI



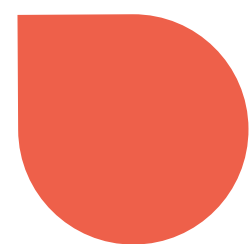
Introduce AI/NLP topics

In a minimalistic, discursive manner, with no math, code, or previous computational knowledge



Focus on the humanities

Especially students interested in languages, such as translators, interpreters, linguists, journalists, etc.



Concentrate in a single place

Information about AI applied to language processing, applications in the language domain

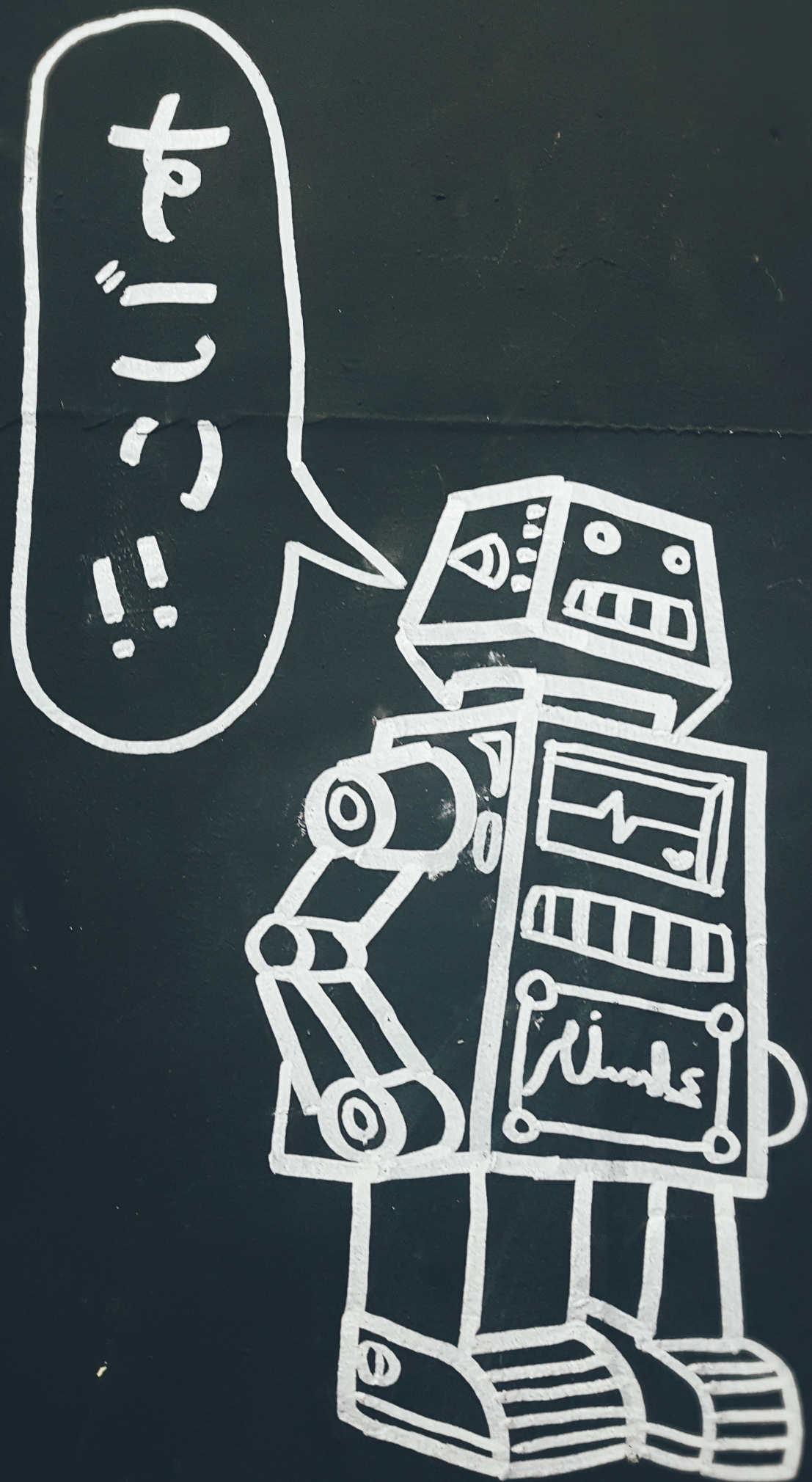
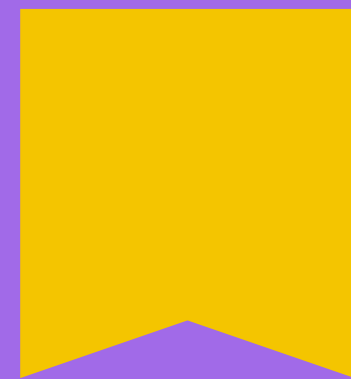
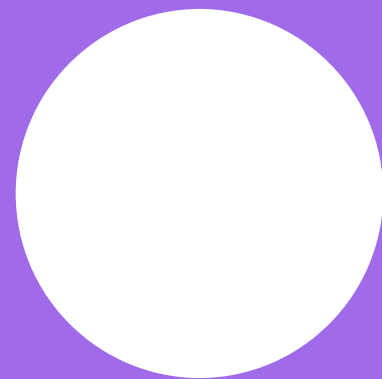


What it is not:

- An introductory class in coding
- A reading for (future) experts in CS

Chapter structure

- A short 2-min video with some key concepts
- A discursive text explaining the topic
- A basic bibliography
- Further readings



Some topics

What is Artificial Intelligence

How does a Digital Boothmate work

How does Automatic Speech Recognition work

How does Machine Interpreting work

What is a bias in Language Models

Why is language so important for AI

Welcome to easyAI!

GENERAL CONCEPTS OF AI

[What is AI](#)

[What is Machine Learning](#)

[Multimodal Machine Learning](#)

BASIC CONCEPTS OF NLP

[What is NLP](#)

[Language Models](#)

APPLIED LANGUAGE TECHNOLOGY

[How does automatic speech recognition work](#)

[Improving texts with AI](#)

[How does Machine Translation work](#)

[How does Machine Interpreting work](#)

[Using facial emotion recognition to improve NLP tasks](#)

GLOSSARY

[Index](#)

[Explanations](#)

This is an easy-to-understand course book on basic concepts of AI/NLP without math and coding, targeting people of the humanities interested in language (translators, interpreters, linguists).

All AI/ML topics are explained by referring to language. Besides general high-level texts on the single topics, the course book contains also practical examples around language. Such examples are explained both in text and in graphics/videos.

Topics

General concepts of AI

- [What is AI](#)
- [What is Machine Learning](#)
- [Multimodal Machine Learning](#)

Basic Concepts of NLP

- [What is NLP](#)
- [Language Models](#)

Applied Language Technology

- [How does automatic speech recognition work](#)
- [Improving texts with AI](#)
- [How does Machine Translation work](#)
- [How does Machine Interpreting work](#)
- [Using facial emotion recognition to improve NLP tasks](#)

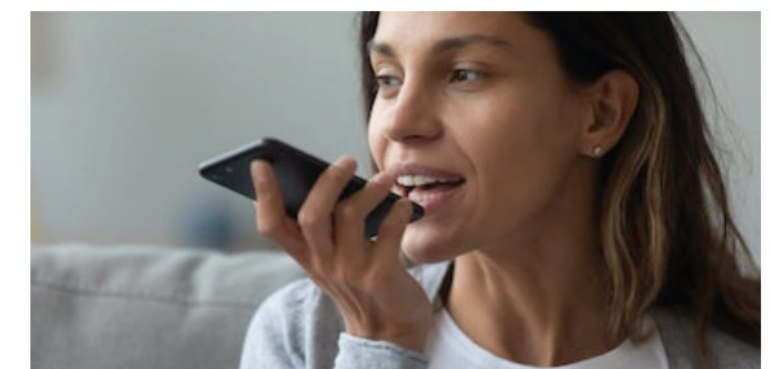
Artificial Intelligence



Natural Language Processing



Language Technologies



Example of introductory video

EasyAI

<https://easyai.uni-mainz.de>

Example of section



How does automatic speech recognition work

☰ Contents

Hybrid approach

End-to-end approach

Bibliography

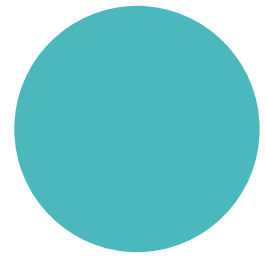
Further reading

Automatic Speech Recognition (ASR) is a technique or an application that uses **Machine Learning** to process human speech and convert it into readable text. The field has grown exponentially over the past decade, with ASR systems used in popular applications such as Instagram for real-time captions, Spotify for podcast transcriptions, Zoom for meeting transcriptions, and so forth.

The product of a speech recognition system is a transcription. This can be a full verbatim transcription if it captures everything in the audio file, including pauses, filler words, laughter, and noises like a door slamming and a phone ringing. It's used in situations where accuracy is critical and every small detail is relevant. In contrast, a clean verbatim transcription does not change the text's meaning or paraphrase it, but it eliminates unnecessary words in the speaker's speech. Non-verbal communication that does not add value to the content is left out, including filler words and stammering. The ultimate goal of this mode of transcription is to achieve a balance between readability and completeness. The degree of deletion depends on the purpose of the application.

There are two main approaches to Automatic Speech Recognition: a *hybrid*, more traditional, approach and an *end-to-end*, modern, **Deep Learning** approach.

Challenges



Simplification is hard



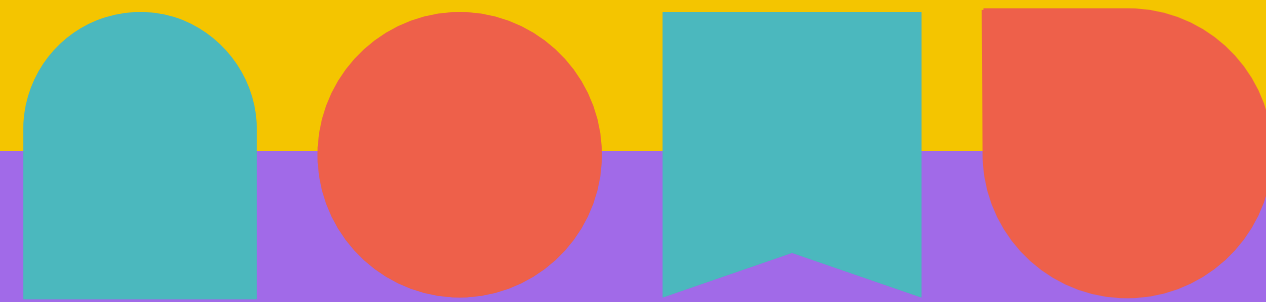
Creating an interesting reading experience is hard



Technology is constantly changing



Available at
www.easyai.uni-mainz.de



— Any time soon

Thank you!

