# Prompt engineering

::: MASTERSEMINAR SUCHMASCHINEN & RAG, CIS, SOMMERSEMESTER 2024 :::

#### Recap: RAG architecture - prompt



### A prompt example



### Zero-shot, one-shot, few shot

Which language is the following text:

"Über allen Gipfeln ist Ruh, in allen Wipfeln spürest Du, nicht einen Hauch"

The language of this text is: German



"Über allen Gipfeln ist Ruh, in allen Wipfeln spürest Du, nicht einen Hauch"

language:de

"Si je desire une eau d'Europe, c'est la flache, noire et froide.."

language:fr

"Winter kept us warm, covering Earth in forgetful snow, feeding A little life with dried tubers."

language:<mark>en</mark>

# Chain-of-thought prompting

Mainly for improving reasoning, a weakness of LLMs

Basic idea:

- instruct the model 'Let's think step-by-step'
- Or give a one-shot example

Q: There are 15 trees in the grove. Grove workers will plant trees in the grove today. After they are done, there will be 21 trees. How many trees did the grove workers plant today?

A: There are 15 trees originally. Then there were 21 trees after some more were planted. So there must have been 21 - 15 = 6. The answer is 6.

Q: A pet store had 64 puppies. In one day they sold 28 of them and put the rest into cages with 4 in each cage. How many cages did they use?

The pet store had 64 puppies. They sold 28 of them. So they had 64 - 28 = 36 puppies left. They put them into cages with 4 in each cage. So they used 36 / 4 = 9 cages. The answer is 9

(example from: Wei et al: Chain-of-Thought Prompting Elicits Reasoning in Large Language Models)