

# NLP Basics

## Meaning Representation



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# Meaning Representations

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- Definition of “Meaning”
  - the idea that is represented by a word, phrase, etc.
  - the idea that a person wants to express by using words, signs, etc.
  - the idea that is expressed in a work of writing, art, etc.



# Meaning Representations in Computers

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Knowledge-Based Representation



Corpus-Based Representation





# Meaning Representations in Computers

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## Knowledge-Based Representation



## Corpus-Based Representation

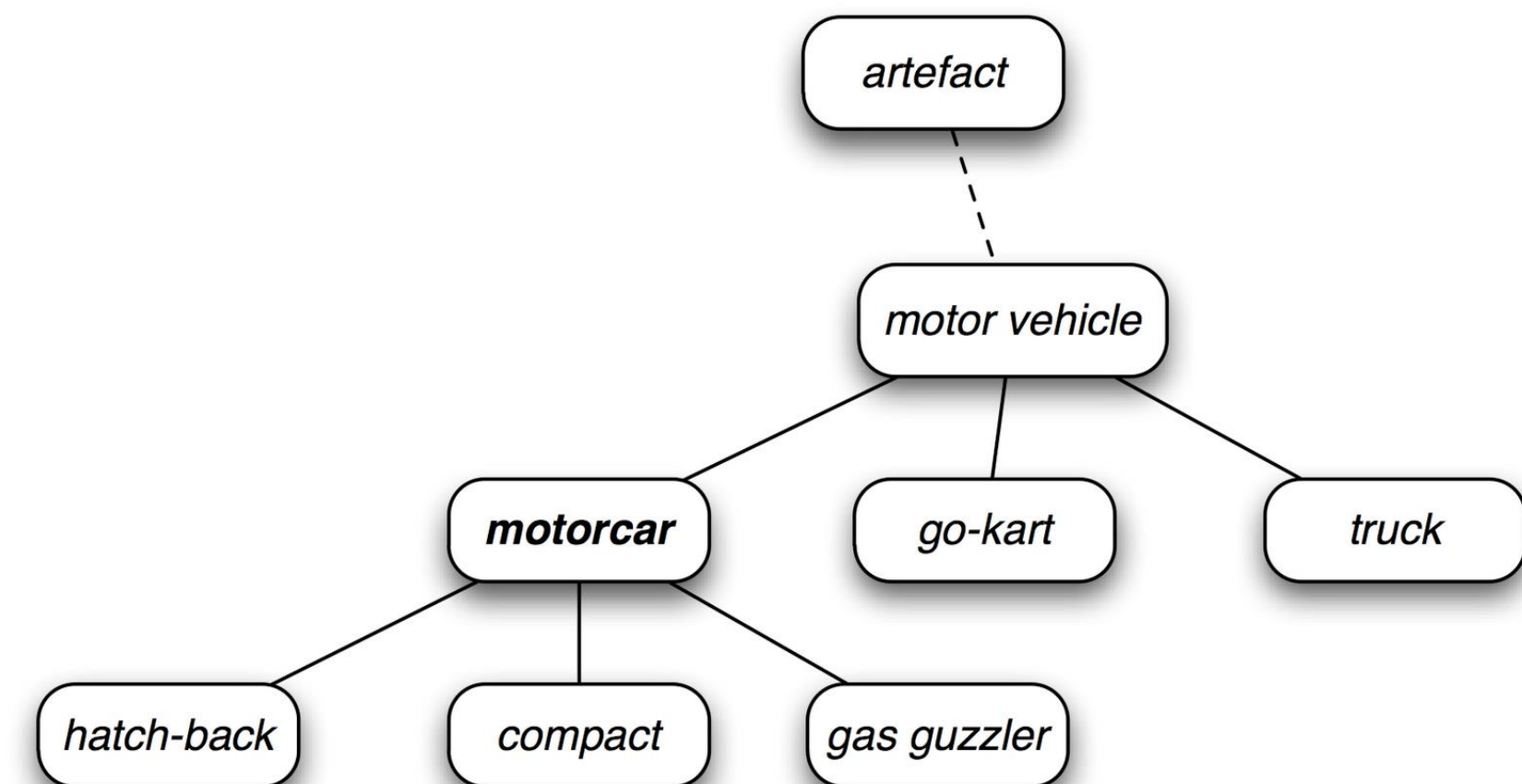


# Knowledge-Based Representation

- Hypernyms (is-a) relationships of WordNet

```
from nltk.corpus import wordnet as wn
panda = wn.synset('panda.n.01')
hyper = lambda s: s.hypernyms()
list(panda.closure(hyper))
```

```
[Synset('procyonid.n.01'),
Synset('carnivore.n.01'),
Synset('placental.n.01'),
Synset('mammal.n.01'),
Synset('vertebrate.n.01'),
Synset('chordate.n.01'),
Synset('animal.n.01'),
Synset('organism.n.01'),
Synset('living_thing.n.01'),
Synset('whole.n.02'),
Synset('object.n.01'),
Synset('physical_entity.n.01'),
Synset('entity.n.01')]
```



## Issues:

- newly-invented words
- subjective
- annotation effort
- difficult to compute word similarity

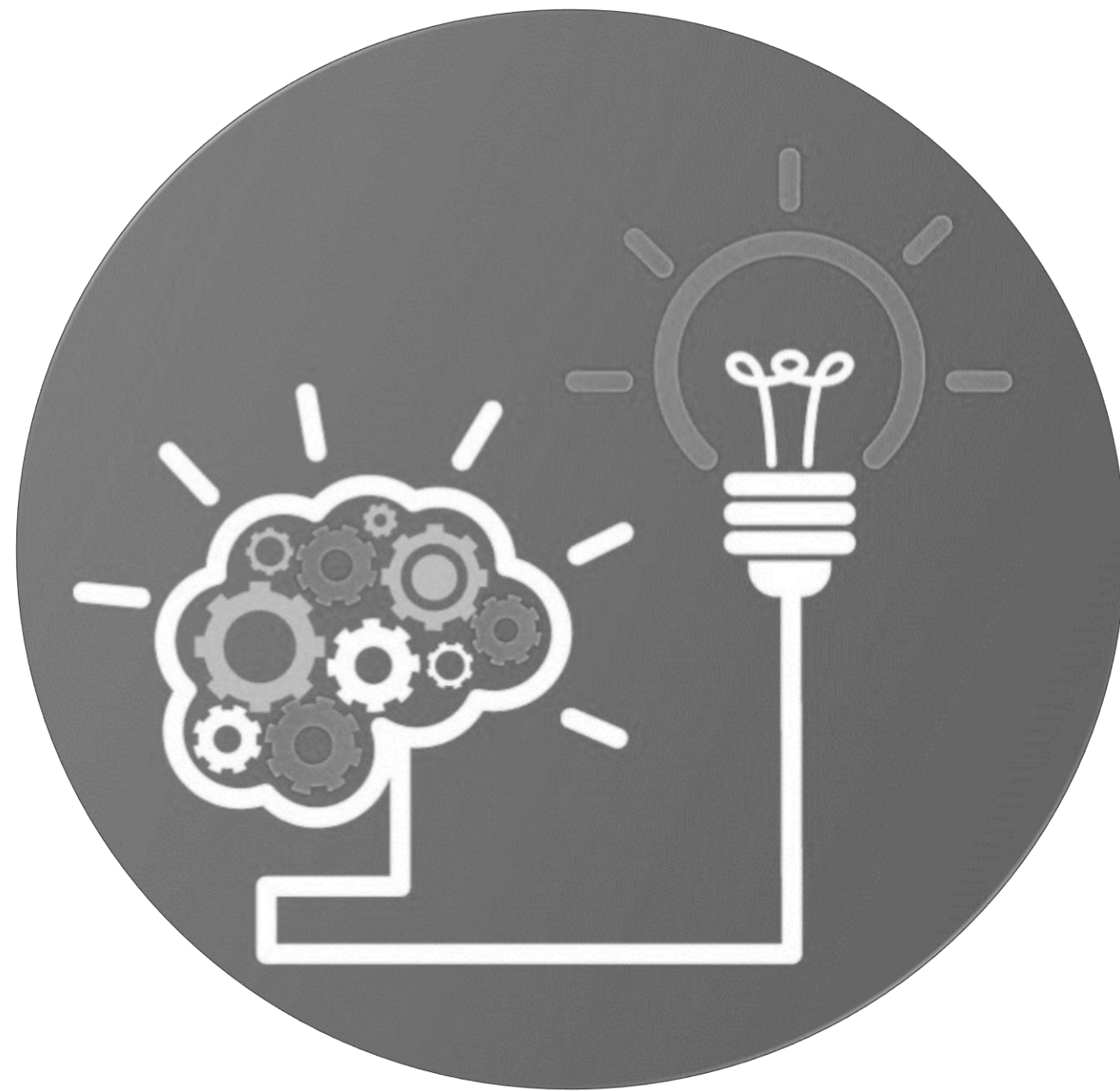




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## Knowledge-Based Representation



## Corpus-Based Representation

