

Benefits and Applications of Large Language Models (LLMs)

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Transfer learning

Large Language models are *representation learners*

Although they are trained on the task of word prediction, they can be *fine-tuned* to perform many other tasks



The linguistic knowledge stored in the initial model can be *transferred* onto new tasks

- + Easier to learn models from small amounts of data
- + Better performance / robustness than models trained from “scratch”



Document intelligence

- Automated classification
- Filtering
- Sentiment analysis
- Information extraction (entity recognition, relation extraction, etc.)
- Text de-identification



Pierre Lison PERSON is working since 2016 DATE as a researcher in machine learning and language technology at the Norwegian Computing Center ORG, a research institute based in Oslo GPE, Norway GPE.

Content creation

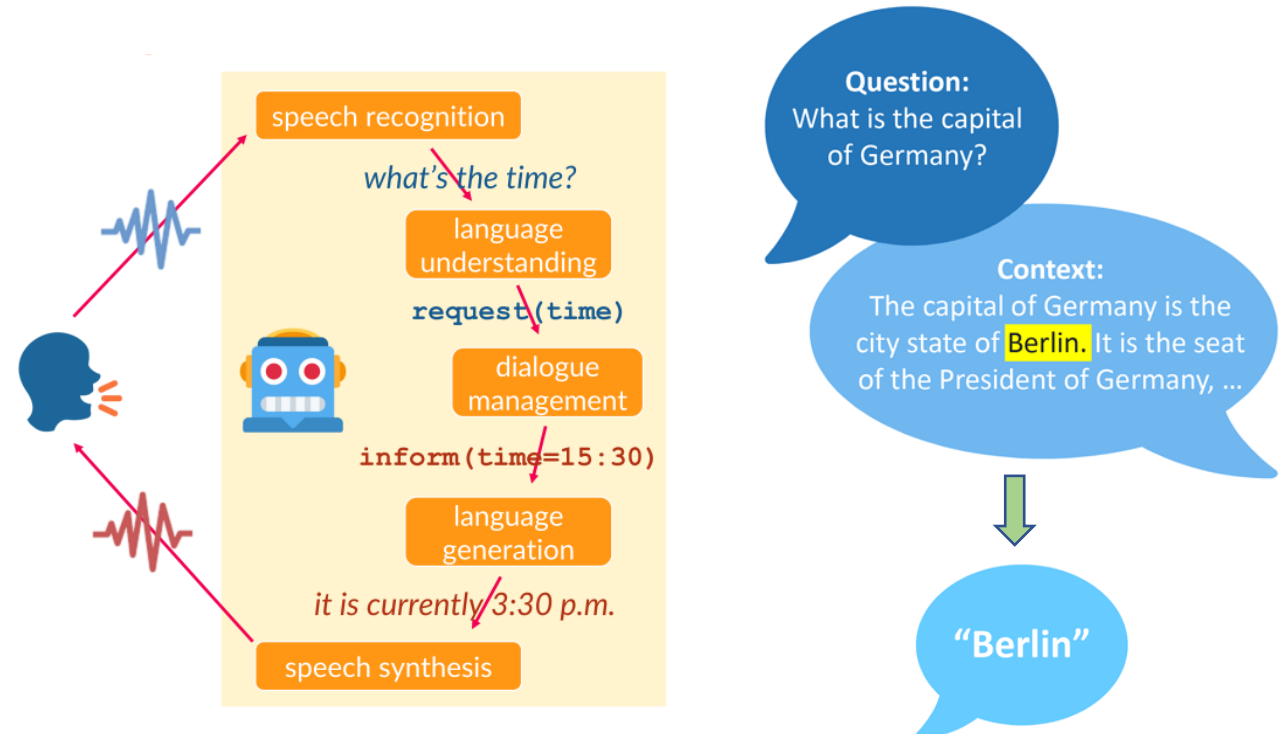
- Autocomplete ++
- Writing assistance (grammar checking, style suggestions, etc.)
- «Co-pilot» for programmers
- Text summarization



GitHub
Copilot

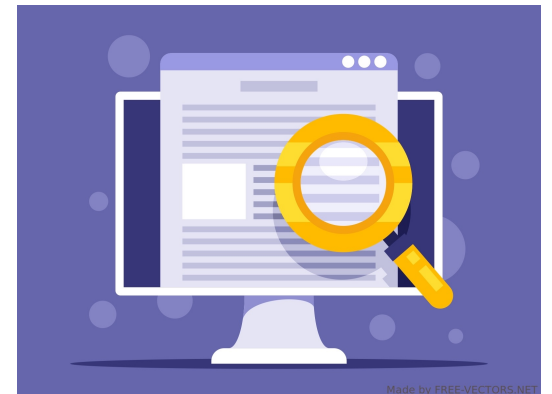
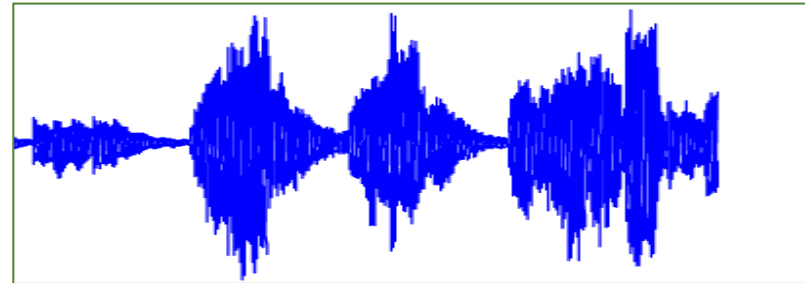
Interactive systems

- Open-ended chatbots
- Task-oriented dialogue systems
- Voice-activated assistants
- Question answering (with knowledge base)



And many others!

- Machine translation
- Speech processing (e.g. speech recognition and synthesis)
- Information retrieval (*search*)



Next developments

- Multimodal models
 - LLMs trained along with non-text data
 - Images, videos, sensorimotor experience, etc.
- Knowledge-augmented models

