General-purpose task solver Transferable NLP task solver Task-agnostic GPT-3/4, ChatGPT feature learner BERT, GPT-1/2 Scaling language models Specific task Prompt based completion Context-aware helper Solve various real-world tasks Representations Task Word2vec (NPLM) Pre-training + fine-tuning Solving Large LM Solve various NLP tasks Static word representations n-gram models capacity Solve typical NLP tasks Statistical methods Pre-trained LM Probability estimation Assist in specific tasks Neural LM Statistical LM 2018 1990s 2020 2013