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now •

Why ChatGPT is a watershed moment?

Not because it is able generate human like answers (well, surely it does) but that it has been able to capture inherent/latent/hidden patterns/structure of a languages in a neural network.

It may be factually wrong at times, but (generally) does not go wrong in sentence formation. Isn't that amazing? Meaning, those 175 billion weights of that GPT (Generative Pretrained Transformer) neural network have 'understood' the language, at least. Newer and smaller models, with say 7 billion parameters, are also getting close in capturing the language.

Its happening because, though the language looks a bit haphazard (unstructured), there are inherent/latent/hidden patterns/structures in it, say grammar, semantics, etc.

In my opinion, issue is, as capturing these was done via Deep Learning (Neural Network) way, it has tried to form features by itself. that has bloated the network and made it less reliable/factual.

How about going Machine Learning way, i.e. we provide features? Meaning, we provide, some schema or some structured input. Would that help reduce the model size and make it more deterministic, reliable and hallucinate less?

The most generic structure is (not lists, trees, or tables) graphs. Providing/augmenting LLM (Large Language Models) training with Knowledge Graph (KG) seems to be the way. So, doing RAG (Retrieval Augmented Generation) on Knowledge Graphs, on top of a foundation LLM seems to be an apt combination.

Now, generating the knowledge graph itself can be tedious, non-standard and lossy operation. But if some domains have it already curated, why not leverage it?

'RAG on KG' is the way forward, till we have ability to automatically generate KGs themselves well and train LLM on top. For that to happen, Deep Learning on Graphs has to work well, but its not there yet, right?

Your comments? I am personally exploring 'Deep Learning on Graphs' with a toy problem (Geometric Dimension Reduction). If interested, connect with me.

Tony
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