



DISTINGUISHED LECTURE SERIES

Thinking in Large Language Models

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Abstract

The emergence of Generative LLMs is revolutionizing NLP and Vision research. Their abilities have been a surprise, given the relative simplicity of their architecture: few people would have predicted that the Transformer's uniform neural architecture augmented by a 'chat loop' would support such varied and powerful performance. But exactly how they do it remains a mystery. How do they represent concepts and combine them when 'thinking'? How do they know how to structure their output and when to stop producing output? This talk explores some basic puzzling aspects and posits necessary operational characteristics to explain them.

Biography

Dr. Hovy completed a Ph.D. in Computer Science (Artificial Intelligence) at Yale University and was awarded honorary doctorates from the National Distance Education University (UNED) in Madrid in 2013 and the University of Antwerp in 2015. He is one of the initial 17 Fellows of the Association for Computational Linguistics (ACL) and is also a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI). Dr. Hovy's research focuses on computational semantics of language and addresses various areas in Natural Language Processing, Machine Learning, and Data Analytics, including in-depth machine reading of text, information extraction, automated text summarization, question answering, the semi-automated construction of large lexicons and ontologies, and machine translation. In early 2024 his Google h-index was 106, with over 60,000 citations.

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