DGIST Seminar: LLM & genAI - Technology, Business Applications, and Some Important Questions

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Abstract

The contemporary landscape of artificial intelligence (AI) has undergone a profound transformation, driven by the emergence and widespread application of large language models (LLMs), with OpenAI's ChatGPT based on GPT-x models serving as a pivotal catalyst. This seminar, tailored for university faculty and students, delves into the dynamic intersection of LLMs and generative AI (genAI), engaging both major industry players and agile startups in a comprehensive exploration.

The first part of the seminar initiates with a concise overview of LLMs, followed by a nuanced technical analysis focusing on the attention mechanism, a linchpin within the Transformer architecture. This examination aims to unveil the intricacies underlying the training and inference processes of LLMs having Transformer components, offering valuable insights into their remarkable capabilities.

Expanding the discourse to genAI, encompassing both technical and business dimensions, the seminar illustrates how LLMs and genAI collectively herald a new era. Numerous examples showcase how these technologies stimulate the creation of innovative applications and transformative business models. The first part of the seminar culminates with an exploration of current trends in genAI, providing strategic insights to navigate market dynamics and foster the development of impactful products.

The second half of the seminar shifts focus to critical non-technical topics surrounding the rapid progress of AI development. Engaging in meaningful discussions, we explore the rationale behind pursuing human-level AI, potential biases, ethical and legal challenges, and the elusive concept of AI consciousness. The speaker encourages active participation from the audience, fostering debates on these intriguing topics. The seminar concludes with the speaker's contemplation on the knowledge, reasoning, and belief systems of AI, particularly those inherent to LLMs, offering a thought-provoking finale to this exploration of the frontiers of AI.