AI Design Patterns for Large Language Models

Published 10 May 2023 - ID G00786734 - 1 min read

Erick Brethenoux

Initiatives: Artificial Intelligence; Enterprise Applications Evaluation and Selection; Evolve Technology and Process Capabilities to Support D&A

Data and analytics leaders struggle in determining how to implement large language models. These downloadable slides provide architecture guidance on a diverse set of design patterns, ranging from out-of-the-box use of ChatGPT and LLMs to complex and customized solutions.

Additional Perspectives

- Summary Translation: AI Design Patterns for Large Language Models (13 June 2023)

Overview

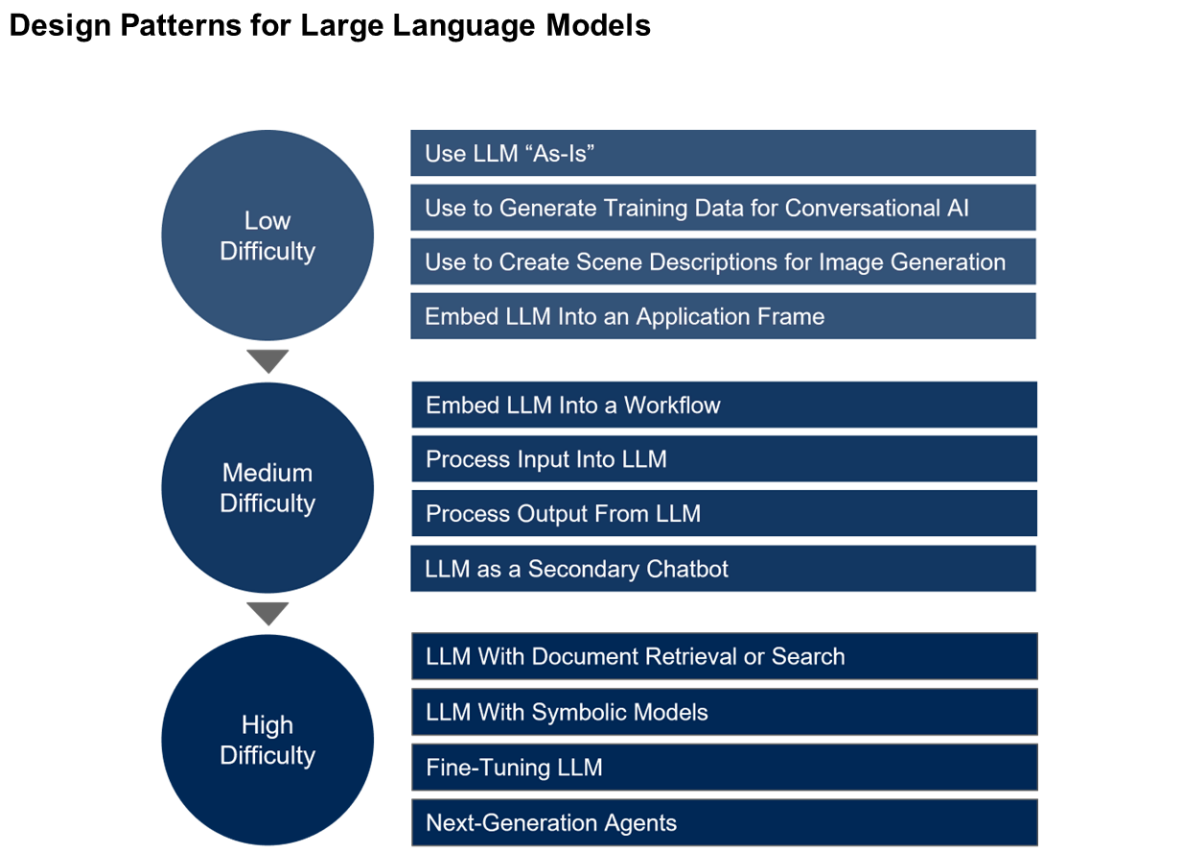
Organizations are racing ahead to implement large language models (LLMs), including applications like ChatGPT. However, data and analytics leaders struggle in understanding how to best include LLM capabilities in their systems and processes, which limits the business value they could obtain from this technology.

This presentation contains 12 key design patterns to implement LLM capabilities. It should be used to facilitate ideation and to rightsize investment based on the design pattern's complexity and value.

Design patterns are reusable solutions to common AI and software design problems. They are not specific to a particular use case, but rather provide a set of repeatable approaches, principles and architectural blueprints that can be applied in diverse use cases. Design patterns help improve the quality, maintainability, consistency and extensibility of software systems.

Each pattern in the presentation includes high-level design illustrations, a description, benefits, drawbacks and use cases. Download the slide deck to view the patterns and explore how they could be used across enterprise solutions (see Figure 1 for all of the design patterns and associated difficulty).

Figure 1: AI Design Patterns for Large Language Models



These LLM design patterns give immediate guidance for organizations to execute on short-term opportunities, and provide a target state to plan ahead for more complex implementations. Organizations must consider these design patterns as they plan and design their LLM implementations.

Recommended by the Authors

ChatGPT Research Highlights

Innovation Insight for Artificial Intelligence Foundation Models

Quick Answer: How Can You Manage Trust, Risk and Security for ChatGPT Usage in Your Enterprise?

Innovation Insight for Composite AI

3 Urgent Conversations AI and Software Engineering Teams Need to Have With One Another

© 2023 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. and its affiliates. This publication may not be reproduced or distributed in any form without Gartner's prior written permission. It consists of the opinions of Gartner's research organization, which should not be construed as statements of fact. While the information contained in this publication has been obtained from sources believed to be reliable, Gartner disclaims all warranties as to the accuracy, completeness or adequacy of such information. Although Gartner research may address legal and financial issues, Gartner does not provide legal or investment advice and its research should not be construed or used as such. Your access and use of this publication are governed by Gartner's Usage Policy. Gartner prides itself on its reputation for independence and objectivity. Its research is produced independently by its research organization without input or influence from any third party. For further information, see "Guiding Principles on Independence and Objectivity." Gartner research may not be used as input into or for the training or development of generative artificial intelligence, machine learning, algorithms, software, or related technologies.