Chapter 12
Real-Time Applications of Artificial Intelligence Technology in Daily Operations

R. Renugadevi
R.M.K. Engineering College, India

J. Shobana
https://orcid.org/0000-0001-9754-2604
SRM Institute of Science and Technology, India

K. Arthi
SRM Institute of Science and Teechnology, India

Kalpana A. V.
https://orcid.org/0000-0003-2289-4968
SRM Institute of Science and Technology, India

D. Satishkumar
Nehru Institute of Technology, India

M. Sivaraja
Nehru Institute of Technology, India

ABSTRACT

Artificial intelligence (AI) is a system endowed with the capability to perceive its surroundings and execute actions aimed at maximizing the probability of accomplishing its objectives. It possesses the capacity to interpret and analyze data in a manner that facilitates learning and adaptation over time. Generative AI pertains to artificial intelligence models specifically designed for the creation of fresh content, spanning written text, audio, images, or videos. Its applications are diverse, ranging from generating stories mimicking a particular author's style to producing realistic images of non-existent individuals, composing music in the manner of renowned composers, or translating textual descriptions into video clips.

DOI: 10.4018/979-8-3693-2615-2.ch012

INTRODUCTION

Artificial intelligence (AI) is a system endowed with the capability to perceive its surroundings and execute actions aimed at maximizing the probability of accomplishing its objectives. It possesses the capacity to interpret and analyze data in a manner that facilitates learning and adaptation over time. Generative AI pertains to artificial intelligence models specifically designed for the creation of fresh content, spanning written text, audio, images, or videos. Its applications are diverse, ranging from generating stories mimicking a particular author's style to producing realistic images of non-existent individuals, composing music in the manner of renowned composers, or translating textual descriptions into video clips.

Traditional AI: Traditional AI relies on predetermined rules or algorithms to perform specific tasks. These rule-based systems lack the ability to learn from data or improve over time. In contrast, generative AI can learn from data and generate novel instances.

Machine Learning: Machine learning enables systems to learn from data rather than relying on explicit programming. Generative AI utilizes machine learning techniques, allowing it to learn from data and create new data instances.

Conversational AI: While generative AI and conversational AI may seem similar, especially when generative AI generates human-like text, their primary distinction lies in purpose. Conversational AI is tailored for creating interactive systems engaging in human-like dialogue, while generative AI encompasses the broader creation of various data types, not limited to text.

Artificial General Intelligence (AGI): AGI refers to highly autonomous systems, currently theoretical, that could surpass humans in most economically valuable tasks. While generative AI may be a component of AGI systems, it doesn't equate to AGI. Generative AI focuses on producing new data instances, while AGI implies a broader level of autonomy and capability.

The machine learning ideas include a wide range of computational methods that can be used to treat all types of application. The ML model's performance techniques such classification and regression trees (CART) and general additives models have been discussed, and the resulting data have then been compared. Additionally, a few potential CART expansions were suggested, including nearest neighbors, projection pursuit, bagging, random forest, boosting, and support vector machines. The primary reason for developing these extensions was the CART model's instability in response to variations in the training set. In training and learning procedures, the aggregated models produced by the extensions are more reliable. However, depending on the type of information need to be collected and the application of these extensions pertains to certain specific instances. ML is often a completely established statistical data analysis technique. It makes it possible to foresee and predict particular extremes