

Chapter 8

The Role of AI and Machine Learning in Neuromarketing: Innovative Tools for Predicting and Shaping Consumer Behavior

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ABSTRACT

Artificial Intelligence (AI) and Machine Learning (ML) techniques are turning into a revolution in the growth of neuromarketing field and various advanced techniques that can engage the customer and provide better insights. Starting with an analysis of these technologies and their significance in the marketing context of the environment, this chapter introduces neuromarketing's applications of AI and ML. Together with the instruments and stages relevant to neuromarketing investigation, it considers the technological background, such as neural nets, deep learning, and predictions. The chapter also briefly considers practical applications also, illustrating how artificial intelligence and machine learning assess buyer behaviour and develop suitable marketing strategies and optimise customers' experiences. The campaigns mentioned and the creative planning or the specific activities that are applied are presented to the readers through perceptible case studies.

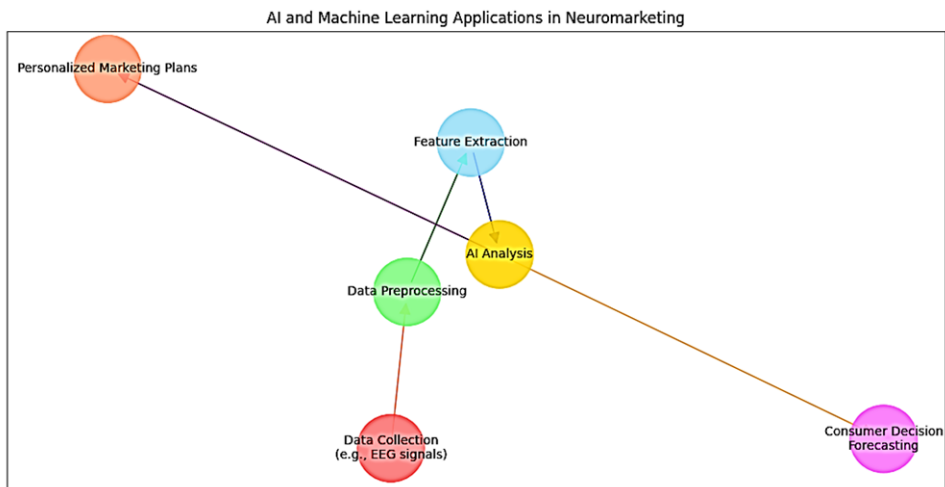
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1. INTRODUCTION TO AI AND MACHINE LEARNING IN NEUROMARKETING

As the branches of data science, artificial intelligence (AI) and machine learning are crucial in neuromarketing abstracting the consumers' behavior, preferences, and decision-making process (Venher & Nikulcha, 2023; Bansal & Gupta, 2022; Papić, Mihajlović, & Gajić, 2023; Chen, Lin, Ren, & Ren, 2023; Ullah et al., 2022). Artificial neural networks and other AI technologies enable marketers to study brain patterns, predict the customers' actions, and adjust the promotion strategy based on the specific preferences. Applying advance technologies such as AI will make it easier for organizations to ensure that the created marketing strategies are sustainable and eco-friendly while at the same time attracting persons hence improving the level of engagements (Arora, (2024); Arora & Sharma (2023)). Beyond those realms' conscious influence on customer choices, neuromarketing leverages AI to forecast consumers' choices with greater accuracy, thus enhancing the effectiveness of advertising and products. Through the use of AI and ML in neuromarketing, companies gain a competitive advantage as a result of satisfying the needs of consumers in the market.

Figure 1. AI and Machine Learning Applications in Neuromarketing



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