

## **Artificial Intelligence in Marketing**

**Matthew N. O. Sadiku<sup>1</sup>, David Padi<sup>2</sup>, and Janet O. Sadiku<sup>3</sup>**

<sup>1</sup>Roy G. Perry College of Engineering

Prairie View A&M University, Prairie View, TX 77446

<sup>2</sup>Graduate School of International Business and Leadership

Midwest University

Wentzville, Missouri, USA

<sup>3</sup>Juliana King University

Houston , TX, USA

---

### **ABSTRACT**

*Artificial Intelligence (AI) is a field of computer science that creates systems capable of simulating human intelligence. It means any technology that seeks to mimic human intelligence, which covers a huge range of capabilities such as voice and image recognition, machine learning techniques, and semantic search. It involves the development of algorithms and computational models that allow machines to learn, reason, make decisions, and solve complex problems autonomously. AI in marketing is the application of AI technologies like machine learning, natural language processing, and data analytics to optimize and automate marketing tasks. This allows marketers to create more efficient, personalized, and data-driven campaigns. AI in marketing is synonymous with precision, personalization, and efficiency. Marketing AI works by processing data with algorithms and pattern recognition to simulate human intelligence. From chatbots to social media management to full-scale marketing campaigns and automation, artificial intelligence is changing the way marketers do their jobs. In this paper, we will explain various uses of AI in marketing.*

**Key Words:** Advertising, Artificial Intelligence (AI), Digital Marketing, Generative AI, Marketing, Machine Learning.

---

## **1. INTRODUCTION**

Artificial intelligence is an intersection point among disciplines such as computer science, cognitive science, philosophy, neuroscience, linguistically, and engineering scientists, aiming at replicating intelligence comprising of factors that supports reasoning, knowledge acquisition, and response to environmental changes. This technology is a broad term that encompasses a wide range of technologies such as natural language processing, machine learning, deep learning, computer vision, and many others. Marketers' lives are made easier by artificial intelligence. AI assists marketing teams in conducting needs-based analyses. Reporting, auditing, spot-checking, and other routine tasks which form the backbone of any media business can be totally automated, allowing professionals to focus on strategy and creativity. Various modern advertisers employ AI to assist advertising teams in completing more technical jobs that require minimal human expertise [1].

## **2. WHAT IS ARTIFICIAL INTELLIGENCE?**

The term “artificial intelligence” (AI) is an umbrella term John McCarthy, a computer scientist, coined in 1955 and defined as “the science and engineering of intelligent machines.” It refers to the ability of a computer system to perform human tasks (such as thinking and learning) that usually can only be accomplished using human intelligence [2]. Typically, AI systems demonstrate at least some of the following human behaviors: planning, learning, reasoning, problem solving, knowledge representation, perception, speech recognition, decision-making, language translation, motion, manipulation, intelligence, and creativity.

The 10 U.S. Code § 2358 define artificial intelligence as [3]:

1. “Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.
2. An artificial system developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.
3. An artificial system designed to think or act like a human, including cognitive architectures and neural networks.
4. A set of techniques, including machine learning, that is designed to approximate a cognitive task.
5. An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision making, and acting.”

AI provides tools creating intelligent machines which can behave like humans, think like humans, and make decisions like humans. The main goals of artificial intelligence are [4]:

1. Replicate human intelligence
2. Solve knowledge-intensive tasks
3. Make an intelligent connection of perception and action
4. Build a machine which can perform tasks that requires human intelligence
5. Create some system which can exhibit intelligent behavior, learn new things by itself, demonstrate, explain, and can advise to its user.

AI is not a single technology but a range of computational models and algorithms. The concept of AI is an umbrella term that encompasses many different technologies. AI is not a single technology but a collection of techniques that enables computer systems to perform tasks that would otherwise require human intelligence. The major disciplines in AI include [5]:

- *Expert systems*
- *Fuzzy logic*
- *Neural networks*
- *Machine learning (ML)*
- *Deep learning*
- *Natural Language Processors (NLP)*
- *Robots*

These computer-based tools or technologies have been used to achieve AI’s goals. Each AI tool has its own advantages. Using a combination of these models, rather than a single model, is recommended. Figure 1 shows a typical expert system, while Figure 2 illustrates the AI tools. These tools are gaining momentum across every industry. Analytics can be considered a core AI capability.

### **3. ARTIFICIAL INTELLIGENCE IN MARKETING**

Marketing can be regarded as a management process involving delivering goods and services to customers. It is founded on business strategy from the perspective of client needs and satisfaction as a philosophy. The most fundamental goal of marketing is to connect your brand with your audience: human beings. So AI should help you achieve this goal instead of just automating processes. Artificial Intelligence (AI) has vast potential in marketing. It aids in proliferating information and data sources, improving software's data management capabilities, and designing intricate and advanced algorithms. By using AI, marketers can quickly determine what content to target customers and which channel to employ at what moment. While humans excel as marketers, their capabilities are significantly enhanced when supported by AI tools. As Karim Lakhani rightly said, “AI won’t replace humans, but humans with AI will replace humans without AI.” So, it is very important for marketers to know how to use AI. Marketing professionals who want to future-proof their careers must master the use of AI. Figure 3 shows a representation of AI in marketing [6], while Figure 4 shows marketing areas where AI can bring about transformative effects [7].

AI marketing is the process of using AI capabilities like data collection, data-driven analysis, natural language processing (NLP), and machine learning (ML) to deliver customer insights and automate critical marketing decisions. Marketing departments use AI tools in a wide variety of customer-facing and internal applications. At present, many marketers are underutilizing AI, but the impact of AI in marketing is already transforming the business landscape, helping leaders make data-informed decisions with greater efficiency and accuracy. Marketers are using AI for market research, creating reports about the state of an industry or sector, and demonstrating ideas that can be later executed on. AI enables marketing professionals to tailor campaigns by analyzing customer behavior and preferences, delivering highly personalized experiences from product recommendations to targeted advertisements. AI is also being used by some marketers to generate images and videos, allowing them to scale every piece of a marketing campaign to specific audience segments and remain competitive in the digital marketplace [8]. AI tools can analyze everything from browsing behavior and purchase history to social media engagement, providing a 360-degree view of the customer.

Figure 5 shows various uses of AI in marketing [9].

#### 4. APPLICATIONS OF AI IN MARKETING

Demand forecasting models, sentiment analysis, and marketing automation are visible applications that are making marketing processes more efficient and campaigns more successful. AI is also used in marketing for personalized experiences, programmatic advertising, predictive analytics, personalization, segmentation, and content creation. Each application has major implications for marketers, but the applications have different roles to play across the customer journey. Common applications of AI in marketing include the following [10-12]:

- **Digital Marketing:** Digital marketing has undergone significant transformations, and artificial intelligence is at the center of this revolution. AI is primarily concerned with user retention and lead conversion in digital marketing. Several factors determine the impact of AI on digital marketing. Digital marketing gives a visibly pleasant experience for clients with AI for advertising across social media and digital platforms such as Facebook and Instagram. In the world of digital marketing, AI can streamline and optimize marketing campaigns. It can also eliminate the risk of human error. While much of the digital marketing world is still dependent on human ingenuity, an AI program might be able to generate a report using nothing but data. AI digital marketing and data analysis strategies are far more efficient and accurate than human capabilities. It enables personalizing the audience's user experience, engaging them, and increasing eCommerce sales. The evolution of artificial intelligence in digital marketing is a path of no return.
- **Ad Targeting:** One of the most important lessons in marketing is learning when and where to direct your resources. Machine learning algorithms can run through vast amounts of historical data to establish which ads perform best on which people and at what stage in the buying process. Using this data they can serve them with the most effective content at the right time. By using machine learning to constantly optimize thousands of variables you can achieve more effective ad placement and content than traditional methods.
- **Programmatic Advertising:** This is a valuable AI marketing use case. However, a key to implementing programmatic advertising is that you should aim to solve specific problems, not just use AI for everything. Programmatic advertising, powered by AI, automates the buying and placing of digital ads. AI automates the buying and placement of ads, targeting specific audiences with more precision. AI uses programmatic advertising to automate and optimize the buying and placement of ads in real-time, ensuring ads are delivered to the most receptive audiences at the ideal time and channel. AI enhances programmatic advertising by automating ad transactions, optimizing spending, and targeting audiences effectively. A few current uses of programmatic advertising include campaign optimization, precise segmentation, creative optimization, and real-time bidding.

- **Chatbots:** Chatbots mimic human intelligence by being able to interpret consumer's queries and complete orders for them. They provide instant, 24/7 customer support, answer routine queries, and offer personalized product recommendations. Using open chatbot development platforms, it is relatively easy to create your own chatbot without a big team of developers. Chatbots might be used at the back end to inform and support marketing operations, or they might be used on the front-end to directly interact with customers on your website. Although many enterprise chatbots do already exist like ChatGPT, Microsoft Copilot, and Google Gemini, there is still value in having your own chatbot on your website for customers to ask questions specific to your brand. Chatbots rely on relatively simple algorithms, whereas AI bots have greater capabilities, incorporating complex algorithms and NLP. Figure 6 shows a representation of chatbot [13].
- **Content Creation:** AI is changing the way companies create blog posts, social media messaging, and ad campaigns. By far the most profound and one of the most controversial AI marketing trends is generative AI. Generative pre-trained transformer models that power services like ChatGPT, Microsoft Copilot, Google Gemini, and a plethora of other models have taken the world by storm with the ability to generate large quantities of human-like text in seconds. This has been revolutionary for content marketers who need to quickly generate drafts, produce ideas, or automate certain parts of their workflows. Generative AI has made its way into every corner of the digital content marketing scene. Generative AI tools can automatically create high-quality written content like blog posts, social media captions, and email subject lines. Figure 7 shows generative AI for content creation in marketing [11].
- **Customer Segmentation:** AI helps businesses intelligently and efficiently divide up their customers by various traits, interests, and behaviors, leading to enhanced targeting and more effective marketing campaigns. With AI's ability to process vast datasets, marketers can identify micro-segments and target them with precision. This results in more relevant messaging, higher engagement rates, and a better overall customer experience. AI-driven segmentation goes beyond demographic data to incorporate behavioral, contextual and psychographic insights to create detailed customer profiles. AI has allowed for nuanced segmentation and targeting within larger audiences, which enables companies to address individuals' specific needs. As more data becomes available, AI allows marketers to keep pace with consumer demands.
- **Product Recommendations:** AI product recommendations are responsible for the success of the largest ecommerce retailers. Recommendations can be created according to different logic models and based not only on your company's internal data but also on contextual information. Segmenting audiences does not just have to stop at identifying audiences and potential opportunities for marketing campaigns. It can identify which products each individual is most likely to purchase and tailor email campaigns and even on-page experiences for them.
- **E-commerce:** AI allows businesses to improve their e-commerce programs and digital marketing capabilities by giving them a more nuanced understanding of their customer's needs and buying habits, automating tasks and simplifying workflows.

## 5. BENEFITS

The benefits of AI in marketing are many. By converting customer data into actionable insights, AI can significantly improve customer engagement and return on investment (ROI). By automating routine tasks, personalizing messages, and using data to identify at-risk customers, you can greatly increase the effectiveness of your relationships with your customers. Other benefits of AI in marketing include the following [10]:

- **Automation:** Marketing gives the company a competitive advantage by using an integrated approach to system automation. Marketing automation techniques generally involve a series of rules, which when triggered initiates interactions with the customer. AI automates repetitive, time-consuming tasks such as

scheduling social media posts, sending emails, and lead nurturing. This increases efficiency and allows marketing teams to focus on strategy and creativity.

- **Predictive Analytics:** Predictive analytics is one of the best AI marketing use cases because it allows businesses to target their audience better. By analyzing historical data, AI can forecast future customer behaviors and market trends. AI modelling can be applied to predicting the likelihood of a given customer to convert, predicting what price a customer is likely to convert at, or what customers are most likely to make repeat purchases. This application is called predictive analytics because it uses analytics data to make predictions about how customers behave. With machine learning algorithms applied to marketing, teams can process large data sets to get predictions.
- **Customer Satisfaction:** Being able to effectively predict customer demand is extremely helpful for your business's reputation as it will increase customer satisfaction. It is far easier to make repeat sales to your existing customer base than it is to attract new customers. So, keeping your existing customers happy is key to your bottom line. Machine learning can run through billions of points of customer data and establish when are the most effective times to make contact, what words in subject lines are most effective and much more.
- **Personalization:** AI algorithms analyze customer data like browsing history, past purchases, and demographics to create unique, highly personalized experiences for each user. When AI systems make experiences more personalized for your customers, you will increase satisfaction and improve your chances of them becoming loyal, repeat customers. In the near future, artificial intelligence will be able to create even more personalized experiences with natural language commands.
- **Smarter Decisions:** Decision-making and client micromanagement are advantages of the AI marketing approach. Making timely decisions based on vast data is one of the functions of machine learning in marketing. AI systems can guide better decision-making processes in your business. Real-time data processing and advanced analytics allow for faster, more data-driven decisions that can quickly adapt to market changes. When your decisions are data driven, you can greatly reduce risk and maximize the benefits of decisions for your brand.
- **Voice Search:** Voice search is an AI technology but, when it comes to using it for marketing, it is about utilizing the technology developed by the major players (Google, Amazon, Apple) rather than developing your own capability. Voice search will change future SEO strategies, and brands need to keep up. With the increasing use of voice assistants like Alexa and Google Assistant, AI is critical for optimizing content for voice search. This involves understanding natural language queries and providing relevant responses
- **Return on Investment:** The return on investment (ROI) is calculated by dividing the profit earned by its cost. It is evident that AI can help optimize ROI in marketing. AI marketing is a powerful source of cost-effectiveness and profit. It has been proved that tailored customer experiences increase ROI in each customer interaction.
- **Dynamic Pricing:** Pricing is dynamic when it changes according to stock, demand, and supply. Now, AI marketing makes it possible to analyze huge quantities of competitive data in real time. Monitoring predictive analytics from cookies and browser history, AI platforms can provide personalized pricing to reflect demand. AI adjusts prices in real-time based on demand, competition, and other factors.
- **Scalability:** AI makes it easier to create, maintain, and scale. AI empowers marketing teams to scale efforts across channels and customer segments without compromising quality or consistency. As campaigns grow in complexity, AI ensures they remain personalized, timely, and data-informed.

Figure 8 shows some benefits of AI in marketing and sales [14].

## 6. CHALLENGES

Over-reliance on automation risks homogenizing content and losing the authentic, creative voice that human marketers provide. The cost of acquiring and integrating AI tools can be prohibitive for smaller businesses. AI is clueless when it comes to achieving marketing goals. They will require experience and patience to learn about the corporate goals, customer requirements, patterns, and the larger context to achieve mastery. Generative AI can produce inaccurate or fabricated information. Other challenges of AI in marketing include the following [11,12]:

- **Ethical Concerns:** While AI offers powerful capabilities, its use in marketing also raises important ethical concerns that cannot be overlooked. To ensure AI is used responsibly and protects users' rights and privacy, companies will need to establish clear policies and guidelines. Businesses will need to be transparent about their data practices and comply with regulations such as the European Union's General Data Protection Regulation, which protects consumer data across the EU. Balancing the benefits of AI with potential negative impacts to consumers and society at large is crucial for ethical AI adoption in marketing.
- **Data Privacy:** One key ethical concern about the growing use of AI in marketing is data privacy. Ensuring data privacy when implementing AI is a serious challenge. AI is frequently portrayed as a danger to privacy. Artificial intelligence used in marketing is most effective when dealing with consumer data, which means that they are a unique risk factor when it comes to staying compliant and maintaining the trust of your audience. You should always get consent from users before collecting and using their data for AI-driven marketing efforts to stay compliant with GDPR and CCPA regulations.
- **Data Quality:** Data quality is, in most cases, more important than the AI model you select. An older AI model with better data quality will perform better than the most innovative model powered by bad data. You can have the best AI model in the world, but it will mean nothing if you do not have high-quality data. Do not ignore the time you need to gather and prepare relevant data for your AI models.
- **Data Governance:** Because AI is trained on personal customer information, the laws surrounding what is usable must be strictly followed. Practicing good data governance and providing transparent explanations of how AI is built and deployed facilitates consumer trust.
- **Bias:** Training an AI model on data with historical or representational bias could lead to unfair representation or discrimination against certain groups or individuals, eroding trust in AI and damaging the reputations of organizations that use it. AI is only as good as the data it is trained on, and often our datasets are biased. Ongoing oversight and auditing are necessary to ensure fairness and prevent bias from being reinforced. To avoid unfair results, human review is always necessary.
- **Limitations:** Despite AI's capabilities, it lacks the innate understanding and emotional intelligence that humans bring. Successful marketing campaigns rely on human creativity, empathy, and the ability to connect with diverse audiences.
- **Integration Complexity:** Existing systems often are not built with AI in mind. Integrating AI applications into those systems can be a serious and costly challenge.
- **Job displacement:** Task automation raised concern about the potential risk of future job loss in the marketing department. If AI is replacing operative tasks but also creative ones like copywriting, it is fair to say that there will be a need for re-skilling in marketing teams.
- **Skill Gaps:** A talent gap exists, as companies struggle to find and train. It is important to nurture future talent, bringing new professionals into the marketing industry, and seeking opportunities to boost what individuals offer. The expertise of engineers and data scientists is necessary for successful AI marketing initiatives. Organizations can invest in hiring the data scientists and engineers they need, or go to a third-party vendor for help training and maintaining their AI marketing tool.

- **Training:** Just like humans, AI requires significant training to learn a new task. For example, if a business needs an AI solution that talks to its customers in an engaging way, it needs to invest the time and resources necessary to teach it. To build an application like this, marketing departments often need a large amount of data about customers' preferences and potentially, data scientists who specialize in doing this training.

## 7. FUTURE OF AI IN MARKETING

Artificial intelligence (AI) is constantly expanding its vocabulary, understanding of user intent, and predictive power. It will become an integral part of every commercial entity across the globe in the long term. AI's role in marketing will continue to expand beyond automation and personalization towards more predictive and strategic functions. Marketers will see greater integration of AI into their daily workflows. They will continue to use AI in the coming decade to improve their performance, personalize their marketing, make their advertising more creative, target their customers more precisely, and fine-tune their media mix [1].

AI is expected to impact data transparency and security in the coming years significantly. As AI continues to evolve, its influence in marketing will deepen. As artificial intelligence changes the marketing industry, the value of AI skills and expertise will only grow, bringing success to those who master them. Customer service and retention is another area where AI will play a huge role in the future.

With the rise of voice search devices, ML will become more precise in the coming years. Generative AI will continue to advance and gain traction among marketers looking for efficient content-generation options. This is the most controversial and unpredictable segment of AI in marketing because the ethical fallout can be difficult to predict. Some

technologists such as Elon Musk believe that AI is "dangerous." They hold AI to a higher standard, because they believe that AI cannot "feel." AI might not deliver on all its promises, due to the challenges it introduces related to data privacy, algorithmic biases, and ethics. Time will tell whether AI can develop to be more efficient and innovative than the human intellect, as well as how this will affect workplaces. However, it will result in the creation of a large number of new employments, including some wholly new categories. Some specialties will vanish, while others will be invented from the ground up, which will be made possible by the AI developments. Figure 9 illustrates the future of AI in digital marketing [15].

## 8. CONCLUSION

AI may not be a magic bullet, but it is changing and advancing our industry far beyond our expectations. Its potential to enhance marketing is extraordinarily promising. As AI becomes an indispensable part of marketing, the advantage will go to those marketers who learn to master it. While AI can make marketing tasks more efficient and productive, it is already impacting individual roles such as copywriting and design. AI is redefining the boundaries of what is possible in marketing. From enabling real-time data analysis to crafting hyper-personalized customer experiences and automating complex campaign workflows, it is quickly becoming an indispensable tool for forward-thinking marketers.

In recent years, AI-powered tools became increasingly ubiquitous across the marketing landscape to augment human labor and streamline workflows. Although AI tools are still in the early stages of development, it is now everywhere and in everything. Artificial intelligence has become a disruptive force that has revolutionized industries and changed marketing practices. More information on AI in marketing is available from the books in [16-24] and the following related journals:

- *The AI Journal*
- *AI Magazine*
- *Journal of Intelligence*
- *Journal of the Academy of Marketing Science*

## REFERENCES

[1] S. M. N. Sakib, "Artificial intelligence in marketing," chrome-extension://efaidnbmninnibpcapjpcglclefindmkaj/https://www.cambridge.org/engage/api-gateway/coe/assets/orp/resource/item/62f67a9469f3a5d944b5382d/original/artificial-intelligence-in-marketing.pdf

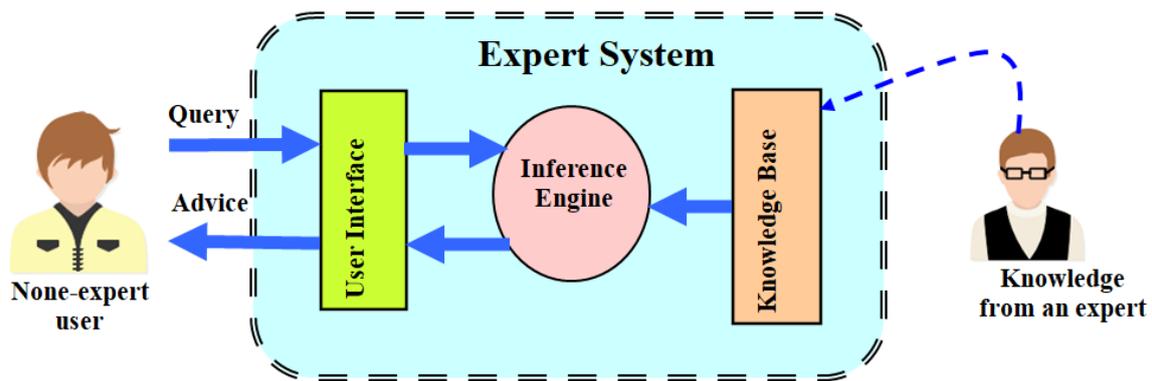
- [2] M. N. O. Sadiku, "Artificial intelligence," *IEEE Potentials*, May 1989, pp. 35-39.
- [3] "Artificial intelligence (AI)," [https://www.law.cornell.edu/wex/artificial\\_intelligence\\_\(ai\)](https://www.law.cornell.edu/wex/artificial_intelligence_(ai))
- [4] "Artificial intelligence tutorial," <https://www.javatpoint.com/artificial-intelligence-tutorial>
- [5] D. Quinby, "Artificial intelligence and the future of travel," May 2017, <https://www.phocuswright.com/Travel-Research/Research-Updates/2017/Artificial-Intelligence-and-the-Future-of-Travel>
- [6] C. Cardona, "Artificial intelligence in marketing," June 2022, <https://brand-innovators.com/artificial-intelligence-in-marketing/>
- [7] V. Kumar, A. R. Ashraf, and W. Nadeem, "AI-powered marketing: What, where, and how?" *International Journal of Information Management*, vol. 77, August 2024.
- [8] M. Russell, "AI will shape the future of marketing," April 2025, <https://professional.dce.harvard.edu/blog/ai-will-shape-the-future-of-marketing/#The-Current-State-of-AI-in-Marketing>
- [9] A. Haleem et al., "Artificial intelligence (AI) applications for marketing: A literature-based study," *International Journal of Intelligent Networks*, vol. 3, 2022, pp. 119-132.
- [10] D. Chaffey, "15 Applications of artificial intelligence in marketing," February 2024, <https://www.smartinsights.com/managing-digital-marketing/marketing-innovation/15-applications-artificial-intelligence-marketing/>
- [11] J. Ramyalg, "Artificial intelligence in marketing: 10 Use cases to boost your growth in 2025," September 2025, <https://mobidev.biz/blog/artificial-intelligence-ai-marketing-use-cases>
- [12] "A guide to AI in marketing," <https://www.ibm.com/think/topics/ai-in-marketing>
- [13] "What is artificial intelligence (AI) marketing? A complete guide," October 2016, <https://emarsys.com/learn/blog/artificial-intelligence-marketing-solutions/>
- [14] "How artificial intelligence enhances marketing and sales strategies," <https://kaizen.com/insights/artificial-intelligence-marketing-sales/>
- [15] T. Davenport et al., "How artificial intelligence will change the future of marketing," *Journal of the Academy of Marketing Science*, October 2019.
- [16] M. N. O. Sadiku, S. M. Musa, and S. R. Nelatury, *Applications of Artificial Intelligence*. Sherida, NY: Gotham Books, 2022.
- [17] M. N. O. Sadiku, *Applications of Artificial Intelligence – Volume 2*. Tallahassee, FL: John & Johnna Publishers, 2025.
- [18] J. Sterne, *Artificial Intelligence for Marketing: Practical Applications*. Wiley, 2017.
- [19] K. King, *Using Artificial Intelligence in Marketing: How to Harness AI and Maintain the Competitive Edge*. Kogan Page, 2019.
- [20] A. K. Pradeep, A. Appel, and S. Sthanunathan, *AI for Marketing and Product Innovation: Powerful New Tools for Predicting Trends, Connecting with Customers, and Closing Sales*. Wiley, 2018.
- [21] P. Roetzer and M. Kaput, *Marketing Artificial Intelligence: AI, Marketing, and the Future of Business*. BenBella Books, 2022.
- [22] K. Sudhir, N. K. Malhotra, and O. Toubia (eds.), *Artificial Intelligence in Marketing*. Emerald Publishing Limited, 2023.
- [23] J. Seligman, *Artificial Intelligence and Marketing*. Taylor & Francis, 2019.
- [24] R. Venkatesan and J. Lecinski, *The AI Marketing Canvas: A Five-Stage Road Map to Implementing Artificial Intelligence in Marketing*. Stanford Business Books, 2021.

**ABOUT THE AUTHORS**

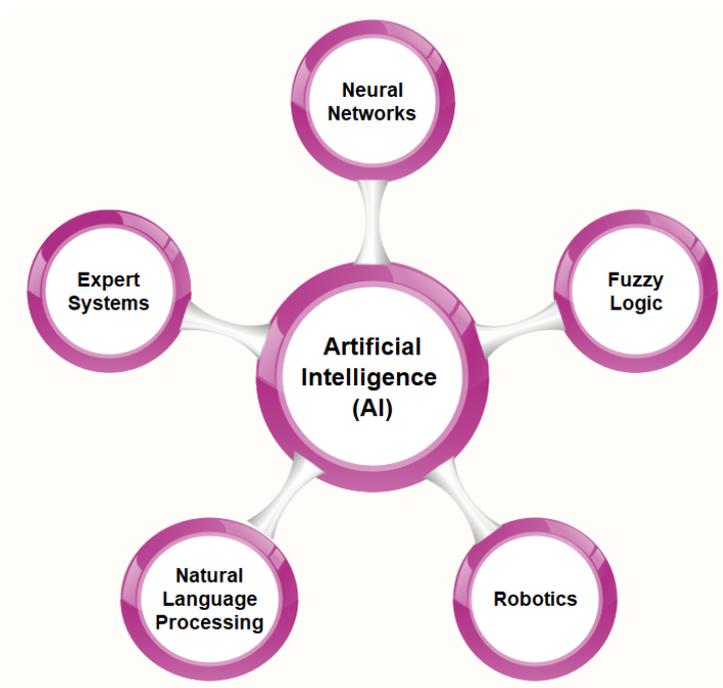
**Matthew N.O. Sadiku** is a professor emeritus in the Department of Electrical and Computer Engineering at Prairie View A&M University, Prairie View, Texas. He is the author of several books and papers. His areas of research interest include computational electromagnetics, computer networks, engineering education, and marriage counseling. He is a Life Fellow of IEEE.

**David Padi** holds a doctoral degree in organizational leadership from Midwest University, Wentzville, Missouri, PhD from NorthCentral University San Diego, California & Lousian Baptist University and a master’s degree in telecommunications from Coventry University, UK. He worked as a technologist, educator, and mentor. He is the author and co-author of some papers. He is a Senior Member of the IEEE.

**Janet O. Sadiku** holds bachelor’s degree in nursing science in 1980 at the University of Ife, now known as Obafemi Awolowo University, Nigeria and doctoral degree from Juliana King University, Houston, TX in December 2023. She has worked as a nurse, educator, and church minister in Nigeria, United Kingdom, Canada, and United States. She is a co-author of some papers and books.



**Figure 1** A typical expert system.



**Figure 2** AI tools.

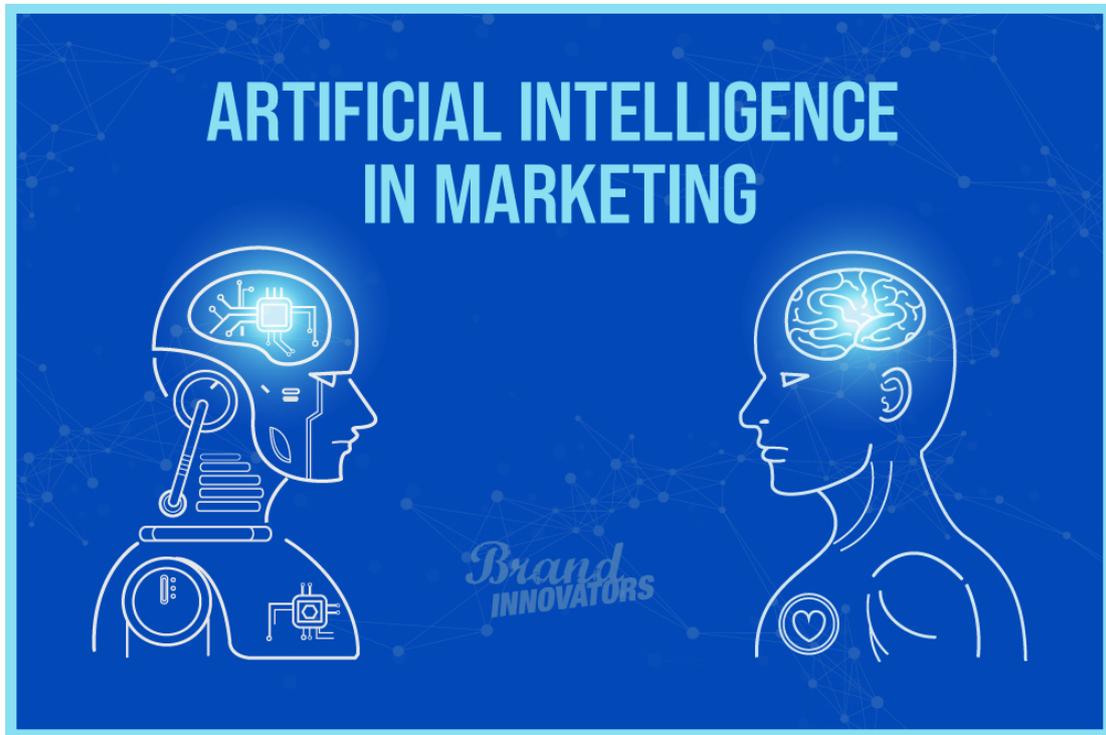


Figure 3 A representation of AI in marketing [6].



Figure 4 Marketing areas where AI can bring about transformative effects [7].



Figure 5 Uses of AI in marketing [9].



Figure 6 A representation of chatbot [13].

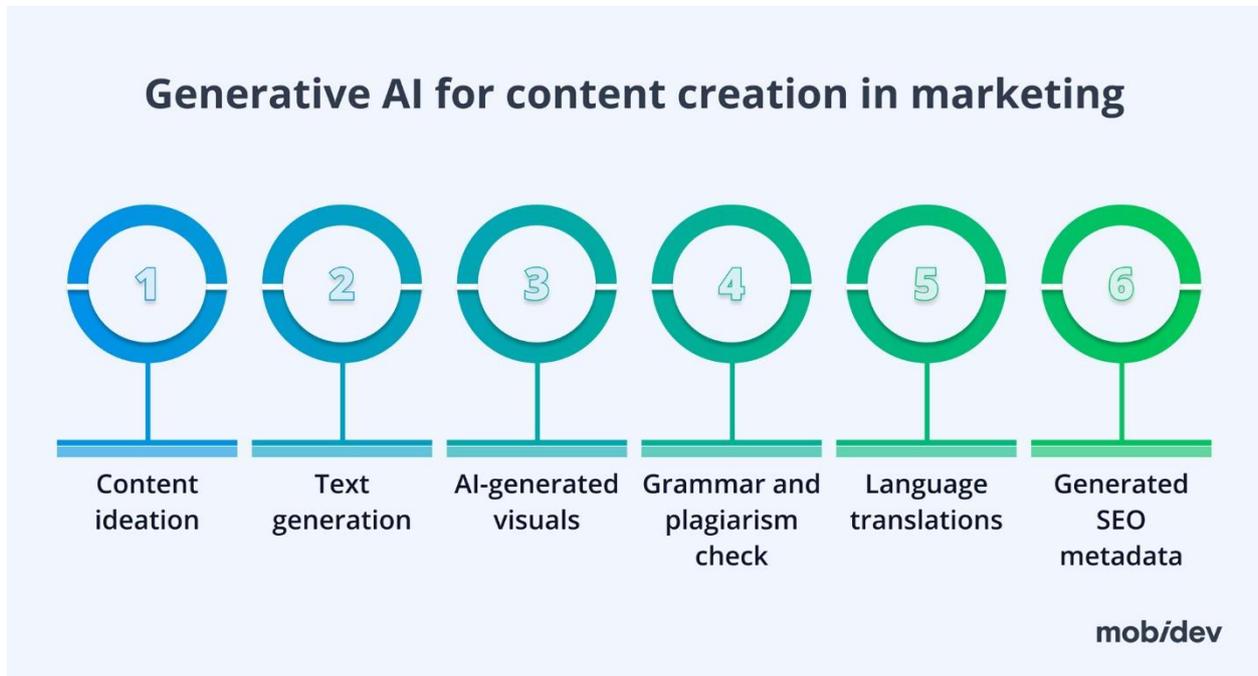


Figure 7 Generative AI for content creation in marketing [11].



Figure 8 Some benefits of AI in marketing and sales [14].



**Figure 9      The future of AI in digital marketing [15].**