

Artificial intelligence techniques and tools and manifestations of change in the role of product designer

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Abstract:

Artificial intelligence is a technology of increasing importance in the world of product design. The study of artificial intelligence and its patterns, procedures and methods of using it in design and decision-making until reaching design results is imperative in light of the conditions of our world, as it imposes on us developments related to data science and the increase in the volume of information, in a way that exceeds much of the capabilities of the human mind and traditional thinking patterns. But how does AI affect product design and how can it help designers create more innovative and effective solutions. It is important for a designer to realize and understand what artificial intelligence is. It is a technology that enables machines to perform tasks that require human intelligence, such as learning, reasoning, and perception. This is achieved through the use of algorithms and data that allow the machine to "learn" independently and improve its skills over time. Now, how can AI affect product design? One of the main methods of AI is to transform product design through the use of machine learning algorithms. This can help designers decide which features to include in a new product. The research problem can be summarized in the following questions: What is the role of artificial intelligence in the product design process? Can artificial intelligence provide information and data about design requirements, consumer desires and needs, and then the ability to make an appropriate design decision? What are the artificial intelligence tools that can be employed in product design and at any of its stages? This study aims to identify the techniques and tools of artificial intelligence and their impact on the product design process at its various stages, as well as its effectiveness in the role of the creative and innovative product designer. The study used the descriptive analytical and deductive approaches. In addition, design attempts are made using a number of design applications using artificial intelligence.

Keywords:

Product Design, Design Process , Artificial Inelegance , Computer Vision, Algorithms, Ideation & Innovation

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