

The use of Artificial Intelligence Techniques to Enhance Creativity in Industrial Design

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Abstract:

Artificial intelligence (AI) offers a new perspective in industrial design through its precision and logical approach. AI programs work by analyzing and processing input data to generate designs or visual products. These designs contribute to increasing growth rates and revenues, thereby attracting more customers. The core research question is: How feasible is it to create modern designs for industrial products using AI programs? The research is significant in two main ways: it aids in discovering new design ideas for industrial products and highlights the applications of AI in the field of industrial design. The research aims to: generate industrial product designs using AI, reduce time, effort, and costs, and produce a variety of designs with the flexibility to make modifications before execution. The hypothesis of this research posits that AI programs can generate numerous designs for industrial products. A descriptive approach, supported by analytical methods, is used to explore AI techniques and their potential in industrial design. The study also takes an experimental approach, conducting a series of experiments to validate the hypothesis. Ten designs for an industrial product (a small car) were created using AI programs, and the designs were assessed through a questionnaire presented to ten evaluators, including faculty members and designers. The results revealed a strong positive correlation between the four sections of the questionnaire, confirming the validity of the research hypothesis. The researcher suggests that AI programs should be adopted and viewed as essential tools for designers to create new and innovative design ideas. Artificial intelligence can contribute to the development of sustainable design solutions by optimizing material usage, enhancing production efficiency, and reducing waste.

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