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iGlassFit - A Novel Personalized Eyeglasses Recommendation System Using Artificial Intelligence Aspects

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● ABSTRACT

To help consumers choose eyewear that complements their facial characteristics and lifestyles, this research introduces a frame-based recommendation system. In this research, we suggest an architecture for a system that may help designers out by highlighting important features like faces, spectacles, and other accessories. That usually means the product is widely available and well-liked by its buyers. The topic of this study is the separation of facial and optical features. Second, develop a theory of quantification based on design models. The next step is to create a system for recommending appropriate eyewear. The selection of suitable eyeglasses can be a challenging task for individuals, often resulting in dissatisfaction and suboptimal choices. This research addresses the need for an AI-based eye glass frame recommendation system that overcomes common challenges and provides personalised recommendations based on facial features, colour coordination, and user preferences. By integrating advanced technologies such as facial feature extraction using Blazeface and FaceMeshV2, object detection with YOLOv8, and collaborative filtering algorithms like LightFM, the system aims to offer accurate recommendations. Additionally, virtual try-on capabilities and colour analysis of facial attributes and clothing are incorporated to enhance the selection process. The system intelligently handles obstructing elements like face masks and eye glasses during facial feature extraction. The project also focuses on user feedback collection and integration for continuous system improvement. The proposed system aims to mitigate the limitations of existing systems, including the lack of comprehensive recommendations, inadequate consideration of colour coordination, and insufficient personalization. Through this research, an innovative AI-based eye glass frame recommendation system was developed, contributing to the field of eyewear selection by providing a user-centric, accurate, and personalised recommendation experience. Think about a system which is recommending a best suited eyeglass frame shape with colour after considering all the facial attributes with eyesight checking option. Finally the system will give an option for a survey to get user feedback. Mistakes with glasses are common. It is not easy to find suitable new glasses. This software, then, has the potential to address critical problems.