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Recommendation Systems for Cereal Cultivation using Advanced Casual Inference Modeling

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Abstract : In recent years, recommendation systems have become indispensable tools for agricultural system. The accurate and timely recommendations can significantly impact crop yield and overall productivity. Causal inference modeling aims to establish cause-and-effect relationships by identifying the impact of variables or factors on outcomes, enabling more accurate and reliable recommendations. New advancements in causal inference models have been found in the literature. With the advent of the modern era, deep learning and machine learning models have emerged as efficient tools for modeling. This study proposed an innovative approach to enhance recommendation systems-based machine learning based casual inference model. By considering the causal effect and opportunity cost of covariates, the proposed system can provide more reliable and actionable recommendations for cereal farmers. To validate the effectiveness of the proposed approach, experiments are conducted using cereal cultivation data of eastern India. Comparative evaluations are performed against existing correlation-based recommendation systems, demonstrating the superiority of the advanced causal inference modeling approach in terms of recommendation accuracy and impact on crop yield. Overall, it empowers farmers with personalized recommendations tailored to their specific circumstances, leading to optimized decision-making and increased crop productivity.

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