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Enhancing CRM Systems with Prompt Engineering: AI-Driven Customer Feedback Intelligence

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Abstract

Customer feedback is a valuable source of insight for improving service quality and maintaining trust in the fuel distribution industry. However, manually analyzing large volumes of customer feedback within Customer Relationship Management (CRM) systems can be time-consuming and inefficient. This study presents an AI-driven enhancement to a patented CRM platform designed for the fuel industry by integrating Large Language Models (LLMs) with prompt engineering techniques to automatically analyze customer feedback. The proposed system classifies feedback into positive, negative, and neutral sentiments and enables faster identification of service issues while supporting automated response generation. Different prompt engineering strategies, including zero-shot, few-shot, and chain-of-thought prompting, are explored to evaluate their effectiveness in sentiment classification. By embedding generative AI capabilities into the CRM platform, the system transforms unstructured feedback into actionable insights, helping fuel distributors improve customer engagement, operational responsiveness, and data-driven decision making.