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(57) Abstract :
The invention discloses a machine learning model (100) for automated customer sentiment analysis, comprising multi-channel input (101), feature extraction (107), sentiment engine (109), interpretability layer (103), and insights dashboard (104). The system processes text, audio, and social media inputs in real time, employing transformer-attention mechanisms (108) for accurate classification. It further provides domain adaptation (110) and interpretability outputs (112, 113, 114). The invention ensures scalable, accurate, and transparent sentiment analysis, delivering actionable insights for businesses across industries while maintaining trust and adaptability.

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