



AI and its Impact on Human Emotion

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Abstract: Artificial Intelligence (AI) has increasingly become part of everyday human interaction, influencing not only technical operations but also emotions, behavior, decision-making, and interpersonal relationships. Advancements in conversational AI, recommendation systems, and emotionally responsive technologies have encouraged users to rely on AI-generated responses for emotional support, personal guidance, and decision assistance. This study examines the impact of AI on human emotions, particularly in the areas of decision-making, emotional dependency, and relationship dynamics. The research adopted a qualitative review-based methodology involving the analysis of 18 research papers published between 2018 and 2026 related to Artificial Intelligence, Human–AI Interaction, affective computing, and emotional AI systems. The study critically analyzed major AI models and algorithms including Transformer architectures, Convolutional Neural Networks (CNN), Long Short-Term Memory (LSTM) networks, Reinforcement Learning systems, and recommendation algorithms to understand their role in emotionally adaptive interactions. The findings revealed that AI systems increasingly influence emotional reasoning and behavioral patterns through personalized responses, emotional simulation, and algorithmic recommendations. However, the study also identified significant limitations, including dependence on incomplete user inputs, lack of genuine emotional intelligence, probabilistic reasoning, and inability to fully understand complex human emotions and contextual realities. Furthermore, excessive dependence on AI systems may contribute to emotional bias reinforcement, cognitive dependency, and reduced independent critical thinking. The study concludes that while AI technologies offer convenience, accessibility, and emotional support, future development must prioritize human-centered AI design, ethical governance, emotional transparency, and preservation of human emotional autonomy to ensure balanced and responsible Human–AI Interaction.

Keywords: Artificial Intelligence, Human Emotions, Human–AI Interaction, Conversational AI, Emotional Dependency, Decision-Making, Recommendation Systems, Emotional AI, Affective Computing, Ethical AI

INTRODUCTION

Artificial Intelligence (AI) has rapidly evolved beyond automation and computational tasks into areas involving human communication, emotional interaction, and behavioral influence. Modern AI systems such as conversational chatbots, recommendation algorithms, and virtual assistants are increasingly integrated into everyday life, influencing emotional reasoning, interpersonal communication, and decision-making [1]. The rise of generative AI and emotionally adaptive systems has transformed Human–AI Interaction into a socially and psychologically significant phenomenon.

Advancements in Natural Language Processing (NLP) and affective computing have enabled AI systems to generate personalized and human-like responses [2]. Conversational AI platforms are now widely used for emotional reassurance, companionship, personal guidance, and decision support [3]. However, these systems operate through probabilistic prediction and learned data patterns rather than genuine emotional understanding or contextual awareness. As a result, users may increasingly trust AI-generated responses despite their technical limitations.

Human-centered AI frameworks suggest that AI systems should support human reasoning while preserving emotional autonomy and critical thinking [4], [5]. In reality, growing dependence on AI systems has raised concerns regarding cognitive offloading, emotional manipulation, and reduced independent decision-making. Conversational AI systems rely heavily on incomplete user-provided information, which may lead to emotionally biased outputs and reinforcement of one-sided perspectives [6]. Similarly, recommendation systems influence emotional engagement and behavioral patterns through continuous personalization and algorithmic conditioning [7].

Several recent studies have explored emotional AI, conversational systems, and Human–AI Interaction from technical and psychological perspectives. Research in affective computing has focused on emotion recognition technologies using text, speech, and facial analysis [8], while studies related to Explainable Artificial Intelligence (XAI) have shown that users often trust AI-generated outputs without fully understanding how those outputs are produced [9]. Despite these contributions, existing literature remains fragmented across technical, ethical, and psychological domains, with limited focus on the long-term emotional consequences of AI dependency.



The present study addresses this gap by critically examining how AI systems influence human emotions, decision-making, and interpersonal relationships within digital environments. The research focuses on emotional dependency, AI-mediated judgment, recommendation system influence, and the ethical implications of emotionally persuasive AI systems. Following the CARS (Create A Research Space) model, the study identifies critical gaps in existing literature and provides a multidisciplinary analysis integrating Artificial Intelligence, Human-Computer Interaction, behavioral psychology, and digital ethics.

Novelty of this paper

- This study examines AI as an emotionally influential system rather than only a technical tool.
- The research combines perspectives from Artificial Intelligence, Human-Computer Interaction, behavioral psychology, and digital ethics.
- Unlike previous studies focused mainly on AI performance or emotion detection, this paper analyzes how AI affects emotional reasoning, decision-making, and interpersonal relationships.
- The study critically examines emotional dependency on conversational AI and recommendation systems.
- It highlights the gap between simulated emotional intelligence and genuine human emotional understanding.
- The research emphasizes the need for human-centered and ethically responsible AI systems that preserve emotional autonomy and critical thinking.

LITERATURE REVIEW

In the study "*Emotional AI: The Rise of Empathic Media*," McStay [1] examined how emotionally adaptive AI systems simulate empathy and emotional understanding through conversational interaction, behavioral analysis, and affective computing technologies. The research highlighted that Emotional AI increasingly influences user behavior and emotional responses despite lacking genuine emotional intelligence. However, the study primarily focused on emotional media systems and provided limited discussion regarding long-term emotional dependency and interpersonal decision-making. Brown et al. [2], in their paper "*Language Models are Few-Shot Learners*," explored the capabilities of GPT-based conversational AI systems. Their research demonstrated how large language models generate human-like responses using probabilistic language prediction and large-scale training data. The study significantly contributed to conversational AI development but did not critically examine the psychological effects of users emotionally trusting AI-generated responses.

In "*Human-Centered Artificial Intelligence: Reliable, Safe & Trustworthy*," Shneiderman [3] emphasized that AI systems should support human reasoning rather than replace emotional autonomy and independent judgment. The study highlighted the importance of reliability, transparency, and ethical AI design. Although the research established strong theoretical foundations for Human-Centered AI, it did not specifically analyze emotional dependency created through conversational AI interaction.

Miller [4], in the paper "*Explanation in Artificial Intelligence: Insights from the Social Sciences*," investigated Explainable Artificial Intelligence (XAI) and examined why users tend to trust AI-generated outputs without understanding the reasoning process behind those outputs. The study explained how AI systems are often perceived as objective and rational, increasing user dependence on machine-generated suggestions. However, the research focused more on explainability and transparency than emotional influence.

Ricci, Rokach, and Shapira [5], through "*Recommender Systems Handbook*," analyzed collaborative filtering and recommendation algorithms used in personalized digital platforms such as YouTube, Netflix, and social media systems. Their findings showed that recommendation systems significantly influence user preferences, engagement patterns, and behavioral responses. Nevertheless, the emotional and psychological consequences of long-term algorithmic exposure were not deeply explored.

Calvo et al. [6], in "*The Oxford Handbook of Affective Computing*," explored affective computing technologies and emotion recognition systems capable of analyzing speech, text, facial expressions, and behavioral signals. The study contributed significantly to understanding how AI systems detect emotional patterns using machine learning and deep learning techniques. However, it also acknowledged that emotional recognition technologies remain limited in understanding contextual complexity, emotional ambiguity, and cultural variation.

In "*DARPA's Explainable Artificial Intelligence Program*," Gunning and Aha [7] discussed the importance of transparency and interpretability in AI-driven systems. Their research highlighted the risks associated with users blindly trusting AI-generated outputs without understanding how those outputs are produced. While the study primarily focused



on explainability, it indirectly supported concerns regarding emotional dependency and cognitive offloading identified in the present research.

Vaswani et al. [8], in the landmark paper “*Attention Is All You Need*,” introduced the Transformer architecture that later became the foundation for modern conversational AI systems such as BERT and GPT. Their research significantly improved Natural Language Processing capabilities through self-attention mechanisms and contextual language processing. Although technically groundbreaking, the study did not examine the emotional and ethical implications associated with increasingly human-like AI communication systems.

Collectively, these studies demonstrate that current AI systems possess advanced conversational, emotional recognition, and personalization capabilities that increasingly influence human emotions, behavior, and decision-making. However, existing literature largely focuses either on technical performance or emotional detection accuracy, while comparatively limited attention has been given to the emotional consequences of dependency on AI-mediated judgment and emotionally persuasive interaction. The present study addresses this gap by integrating technical, psychological, and ethical perspectives to critically analyze how AI systems influence emotional reasoning, interpersonal relationships, and independent human judgment within modern digital environments.

Research Gap: No existing work comprehensively examines AI’s emotional influence **across contexts** (conversational support, recommendations, decision tasks) with an eye toward preserving human autonomy. The proposed study will fill this niche by synthesizing these threads: it will analyze how AI’s design (probabilistic outputs, context limits) interacts with user psychology, shaping emotional reasoning. In doing so, it aims to propose a human-centered framework that addresses the ethical and practical concerns highlighted above.

AI MODELS AND ALGORITHMS USED IN EMOTIONAL AI SYSTEMS

Modern emotional AI systems use machine learning and deep learning models to analyze emotions, generate human-like responses, and influence user behavior. These systems are widely applied in conversational AI, emotion recognition, and recommendation platforms. Although technologically advanced, they rely on statistical prediction and data patterns rather than genuine emotional understanding.

Transformer models such as BERT and GPT are widely used in conversational AI and Natural Language Processing tasks [1]. These models use self-attention mechanisms to understand language context and generate human-like responses. They are commonly used in chatbots, virtual assistants, and conversational AI systems, where they influence emotional interaction and decision-making through personalized responses.

Convolutional Neural Networks (CNN) are primarily used for image processing and facial emotion recognition [2]. These models identify emotional patterns through facial expressions and visual analysis and are widely used in surveillance systems and human behavior analysis. However, CNN systems often struggle with emotional ambiguity and contextual interpretation.

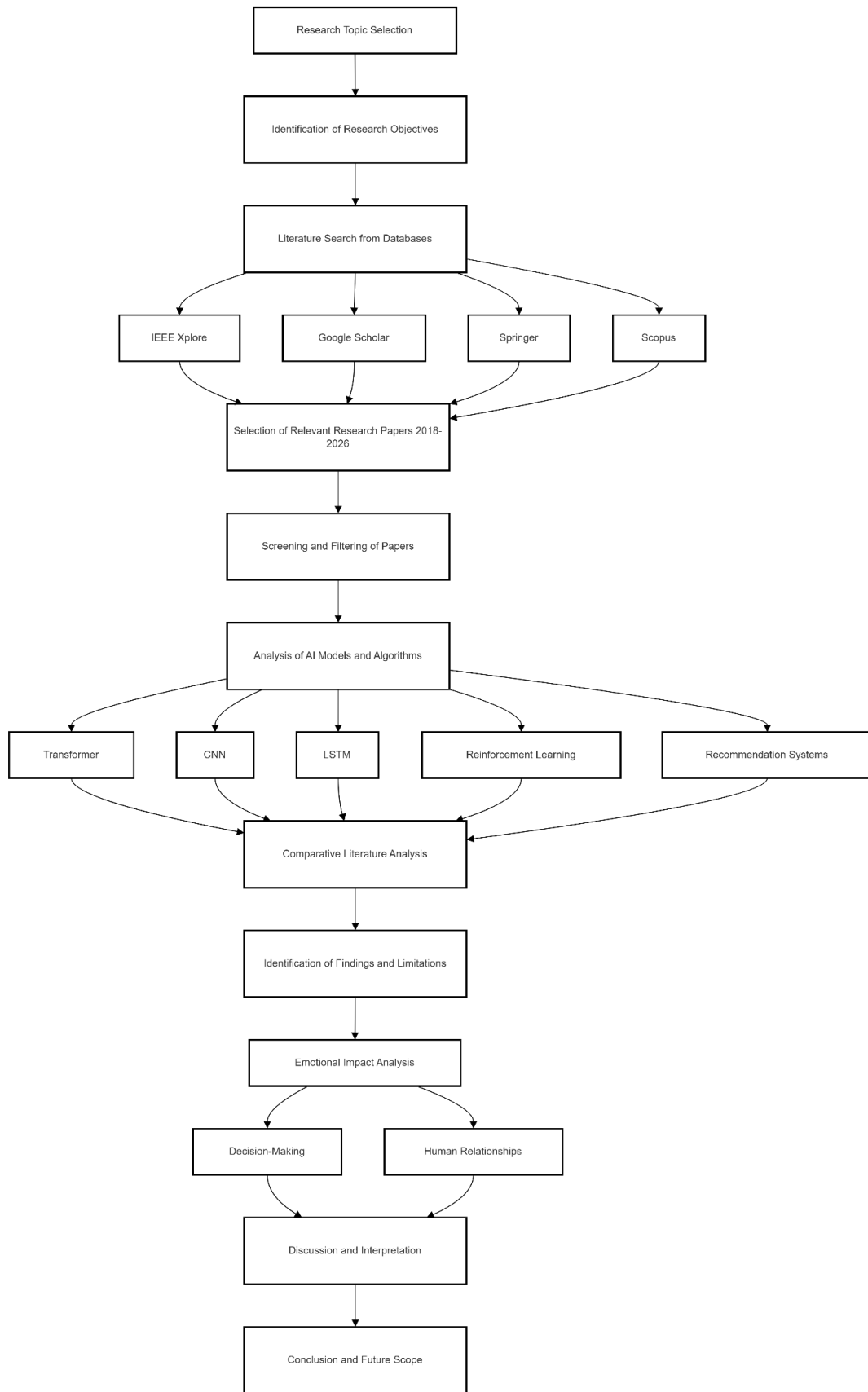
Long Short-Term Memory (LSTM) networks are designed for processing sequential language data and are commonly used in sentiment analysis and emotional text classification [3]. These systems help analyze emotional tone in conversations but may misinterpret sarcasm, mixed emotions, and culturally nuanced communication.

Reinforcement Learning models improve AI decision-making through rewards and penalties [4]. These systems are widely used in recommendation platforms and automated personalization technologies. By continuously optimizing emotionally engaging content, they indirectly influence user behavior and emotional engagement.

Recommendation algorithms use collaborative filtering and content-based filtering techniques to personalize digital experiences [5]. These systems are widely used in social media feeds, streaming platforms, and online shopping applications. Through continuous personalization, recommendation systems shape emotional engagement, user preferences, and behavioral patterns over time.



METHODOLOGY





The research methodology began with the selection of the topic, “*AI and its Impact on Human Emotion*,” followed by the identification of the research objectives related to emotional influence, decision-making, interpersonal relationships, and ethical concerns associated with AI systems. After defining the objectives, a detailed literature search was conducted using academic databases such as IEEE Xplore, Google Scholar, Springer, and Scopus to collect relevant research papers published between 2018 and 2026.

The collected papers were then screened and filtered based on their relevance to conversational AI, emotional AI, recommendation systems, Human–AI Interaction, and emotional dependency. A total of 18 research papers were selected for detailed analysis. The study further examined important AI models and algorithms including Transformer architectures, Convolutional Neural Networks (CNN), Long Short-Term Memory (LSTM) networks, Reinforcement Learning systems, and recommendation algorithms to understand their role in emotionally adaptive AI systems.

Comparative literature analysis was subsequently performed to identify common findings, limitations, psychological impacts, and ethical concerns discussed across previous studies. The analysis particularly focused on how AI systems influence emotional reasoning, decision-making behavior, and interpersonal relationships through conversational interaction and algorithmic personalization. Finally, the findings were critically interpreted to develop conclusions and future recommendations regarding human-centered and ethically responsible AI development.

IMPACT OF AI ON HUMAN EMOTIONS

AI and Decision-Making

Artificial Intelligence systems increasingly influence human decision-making in areas such as education, finance, lifestyle choices, and emotional guidance. Conversational AI and recommendation systems provide fast and personalized responses, leading many users to rely on AI-generated suggestions without independent analysis. Since these systems operate using probabilistic prediction and data patterns rather than real-world understanding, their outputs may not always align with actual human situations. Excessive dependence on AI systems may also reduce critical thinking and encourage cognitive offloading, where users transfer decision-making responsibilities to machines instead of relying on personal reasoning and emotional judgment.

AI and Human Relationships

Conversational AI systems are increasingly used for discussing personal issues, emotional conflicts, and relationship concerns. Users often seek emotional support and validation from AI systems because they are easily accessible and non-judgmental. However, AI systems generate responses based only on user-provided information and lack complete contextual understanding of human relationships. As a result, AI-generated responses may unintentionally reinforce biased perspectives or incomplete narratives, influencing emotional judgments and interpersonal decisions without fully understanding the complexity of human emotions and relationships.

FINDINGS AND OBSERVATIONS

| Ref | Research Paper | Model / Technique | Area of Study | Reported Accuracy / Outcome | Key Finding |
|-----|--|--------------------------|----------------------------|---|--|
| [1] | <i>Language Models are Few-Shot Learners</i> | GPT Transformer | Conversational AI | High contextual text generation accuracy | AI generates human-like responses influencing user interaction |
| [2] | <i>Attention Is All You Need</i> | Transformer Architecture | NLP | Improved NLP performance over RNN models | Self-attention improved contextual understanding |
| [3] | <i>DeepFace</i> | CNN | Facial Emotion Recognition | 97.35% face verification accuracy | CNN models effectively detect facial patterns |
| [4] | <i>Long Short-Term Memory</i> | LSTM | Sentiment Analysis | High sequential text prediction performance | LSTM improves emotional text analysis |
| [5] | <i>Reinforcement Learning: An Introduction</i> | Reinforcement Learning | Recommendation Systems | Optimized user engagement | AI systems influence behavioral patterns |



| | | | | | |
|-----|-------------------------------------|-----------------------------|------------------------------|------------------------------------|---|
| [6] | <i>Recommender Systems Handbook</i> | Collaborative Filtering | Personalized Recommendations | Improved recommendation relevance | Recommendation systems affect user preferences and emotions |
| [7] | <i>Human-Centered AI</i> | Human-Centered AI Framework | Ethical AI | Focused on trustworthy AI systems | Human autonomy should be preserved |
| [8] | <i>Explanation in AI</i> | Explainable AI (XAI) | AI Transparency | Increased user trust in AI outputs | Users trust AI without fully understanding reasoning |

The comparative analysis of selected research papers revealed that modern AI systems demonstrate high performance in conversational interaction, recommendation accuracy, emotional recognition, and personalized content generation. Transformer-based models and recommendation algorithms significantly influence user behavior and emotional engagement through contextual prediction and personalization techniques. However, despite high technical accuracy, most AI systems continue to lack genuine emotional understanding and contextual reasoning. The findings also indicate growing emotional dependency on AI-generated responses, particularly in emotionally sensitive situations involving decision-making and interpersonal relationships.

RESULTS

The analysis of the selected research papers revealed that modern AI systems significantly influence human emotions, decision-making behavior, and interpersonal interaction through conversational responses, emotional recognition, and personalized recommendation mechanisms. Transformer-based conversational models such as GPT demonstrated high capability in generating human-like and emotionally adaptive responses, increasing user engagement and emotional reliance on AI systems. Similarly, recommendation algorithms and Reinforcement Learning systems were found to shape user preferences, emotional behavior, and online interaction patterns through continuous personalization and behavioral optimization.

The findings also showed that AI systems are increasingly used in emotionally sensitive situations involving personal guidance, relationship advice, emotional reassurance, and psychological support. However, despite high technical performance and accuracy in tasks such as language processing and facial recognition, most AI systems continue to rely on probabilistic prediction and user-provided information rather than genuine contextual understanding or emotional intelligence. Several studies further indicated that excessive dependence on AI systems may contribute to cognitive offloading, emotional bias reinforcement, and reduction in independent critical thinking. Overall, the results suggest that while AI systems provide convenience, accessibility, and personalized interaction, they also introduce important ethical, psychological, and emotional challenges that require responsible and human-centered AI development.

LIMITATIONS OF AI SYSTEMS

Despite major advancements, AI systems still possess important limitations in emotional understanding and contextual reasoning. Most AI models depend heavily on user-provided data and probabilistic prediction rather than genuine emotional intelligence or lived human experience. Conversational AI systems may misinterpret sarcasm, emotional ambiguity, cultural nuance, and interpersonal complexity. These limitations highlight the need for cautious and responsible use of AI systems in emotionally sensitive situations.

FUTURE SCOPE

Future AI systems are expected to become more emotionally aware and context-sensitive through advancements in Natural Language Processing, Explainable AI, and emotional recognition technologies. Future development should focus on human-centered AI systems, ethical AI frameworks, transparent decision-making, and emotionally responsible interaction models. Research should also explore methods to ensure that AI systems support emotional well-being without reducing human autonomy, critical thinking, or interpersonal connection.

CONCLUSION

This study examined how Artificial Intelligence influences human emotions, decision-making, and interpersonal relationships through conversational AI, recommendation systems, and emotionally adaptive technologies. The findings



revealed that AI systems increasingly shape emotional reasoning and behavioral patterns despite lacking genuine emotional understanding and contextual awareness. Therefore, future AI development should prioritize human-centered design, ethical responsibility, and balanced Human–AI Interaction to ensure that AI supports rather than replaces authentic human emotional judgment.

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