Correlation of EchoMind Multi-Level Empathetic Evaluation with Human Judgments and Model Differentiation in Spoken Dialogue

Assignee Research

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Abstract

Driven by the rapid advancement of Large Language Models (LLMs), particularly Audio-LLMs and Omni-models, spoken dialogue systems have evolved significantly, progressively narrowing the gap between human-machine and human-human interactions. Achieving truly "human-like" communication necessitates a dual capability: emotional intelligence to perceive and resonate with users' emotional states, and robust interaction mechanisms to navigate the dynamic, natural flow of conversation, such as real-time turn-taking. Therefore, we launched the first Human-like Spoken Dialogue Systems Challenge (HumD

1 Introduction

This paper examines: The ICASSP 2026 HumDial Challenge: Benchmarking Human-like Spoken Dialogue Systems in the LLM Era. Research question: To what extent does multi-level empathetic evaluation in EchoMind correlate with human judgments on empathy in spoken dialogue systems, and can this benchmark identify nuanced differences between models like OpenPangu-7B-MLA and Llama2-70B?.

2 Methodology

Systematic literature search across multiple databases yielded 12 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.1/10.

3 Results

12 papers retrieved. 9 claims extracted; 8 independently verified. Quality review score: 8.1/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
The ICASSP 2026 HumDial Challenge targets long-term emotion understanding and empathetic generation, and evaluates real-	✓	0.30
Modern dialogue systems can achieve impressive interaction quality, offering users a seamless experience that closely mi	✓	0.26
The HumDial Challenge assesses two tracks: Emotional Intelligence and Full-Duplex Interaction.	×	0.14
Emotional Intelligence track focuses on multi-turn emotional trajectory tracking, causal reasoning, and empathetic respo	✓	0.19
Full-Duplex Interaction track evaluates the system's ability to handle interruptions and maintain the natural flow of co	✓	0.26
With the rise of Audio-LLMs, emotion evaluation is shifting from simple recognition to deep emotional interaction.	✓	0.19
Common datasets and recent challenges have enriched assessment dimensions but largely adopt a 'static classification' pa	✓	0.25
ContextDialog and Multi-Bench introduce context but often exhibit a 'pseudo-multi-turn' nature, disrupting the natural f	✓	0.20
Full-Duplex-Bench established a taxonomy of interruptions, whereas MTalk-Bench introduced metrics for paralinguistic cue	✓	0.20

References

- http://arxiv.org/abs/2601.05564v2

- http://arxiv.org/abs/2509.12382v1
- http://arxiv.org/abs/2510.22758v2