

# Situation Context in Context-Aware Emotion Recognition

A Structured Literature Review of Conceptualisation and Modelling Approaches

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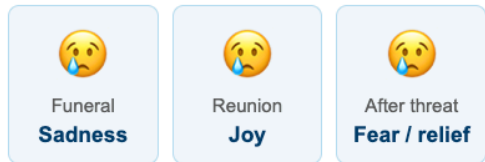
**KEY FINDING** Situation context is fragmented structurally, not just terminologically. Visual ER, conversational ER, and emotion-cause analysis each build different datasets, architectures, and evaluations around different meanings of context.

READ IN ORDER → 1 Problem > 2 Context sources > 3 Research question > 4 Method > 5 Context types > 6 Modelling > 7 Synthesis & challenges > 8 Contribution

## 1 PROBLEM

- ▶ **Faces, voices, words & posture** are ambiguous in isolation
- ▶ The same signal implies **different emotions** across situations
- ▶ Face-only systems can misread isolated signals. **Context** helps resolve ambiguity

**FIG. 1: SAME SIGNAL, DIFFERENT CONTEXTS**



▶ The context changes what the signal means

**Relevance:** social robots, healthcare, tutoring, and assistive agents depend on situation-aware emotion systems

## 2 THREE CONTEXT SOURCES

- ▶ **Sender context:** identity, personality, traits of the expresser
- ▶ **Perceiver context:** expectations, culture, bias of the interpreter
- ▶ **Situation context:** scene · event · dialogue · interaction · cause

This review focuses on situation context because it can be operationalised in datasets, architectures, and evaluation

## 3 RESEARCH QUESTION

How is situation context conceptualised and modelled in context-aware emotion recognition research?

**SQ1** What does situation context mean?

**SQ2** Which cue types are studied?

**SQ3** How is context represented computationally?

**SQ4** Implicit, explicit, or hybrid modelling?

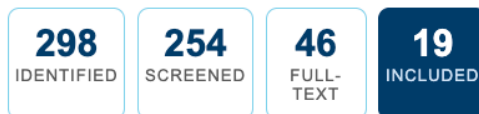
**SQ5** What trends and gaps emerge?

**Goal:** synthesise a fragmented field

## 4 METHOD

- ▶ **PRISMA-style reporting** for transparency and reproducibility
- ▶ Databases: **Scopus · IEEE Xplore · ACM Digital Library**
- ▶ + Supplementary identification
- ▶ Broader surveys (Dorneles 2023; Abbas 2025) used for **positioning only**

**FIG. 2: SCREENING FLOW**



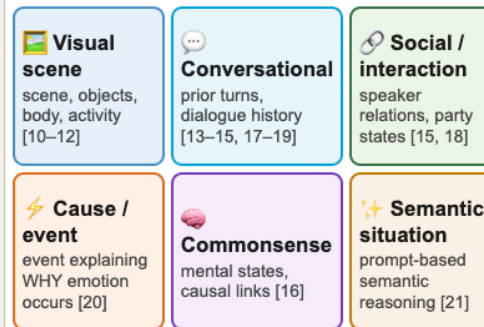
▶ 16 database + 2 snowballing + 1 supervisor-recommended = 19



## 5 SQ1–2: SIX CONTEXT TYPES

No shared definition. Context is defined through task, dataset, or model architecture, not a common taxonomy

**FIG. 3: SITUATION-CONTEXT CUE TYPES BY SUBFIELD**



▶ These cue types are **structurally distinct**, not different labels for the same concept

## 6 SQ3–4: MODELLING STRATEGIES

- ▶ **Implicit:** context in sequence or features. Cannot inspect what was used
- ▶ **Hybrid:** learned representations + explicit structure (common in recent work)
- ▶ **Explicit:** separate branch, graph, cause label, knowledge base, or prompt

**Implicit**  
feature / sequence

**Hybrid**  
learned + structure

**Explicit**  
branch / graph / prompt

## 7 SYNTHESIS & OPEN CHALLENGES

- ▶ **Trend:** the field has moved from **isolated signals** to **structured context** to **semantic reasoning** in LVLMs
- ▶ **Challenge 1:** No **shared taxonomy** exists. The same word "context" means different things across subfields
- ▶ **Challenge 2:** Real situations combine **scene**, **dialogue**, and **cause** simultaneously, but most models address only one
- ▶ **Challenge 3:** Higher accuracy does not prove **faithful context use**. Bias and artefacts may explain the gain

## 8 CONTRIBUTION & FUTURE WORK

- ▶ **Contribution:** focused synthesis isolating situation context across five modelling traditions
- ▶ Shows fragmentation is **structural**: different datasets, architectures, and evaluation assumptions
- ▶ **Limitation:** single researcher · English-only · 19-paper focused synthesis

**Future work:** shared taxonomy · multi-context benchmarks · faithful context evaluation · clearer context boundaries

**Responsible use:** context-aware systems produce uncertain, evidence-based interpretations, not direct emotion readings. EU AI Act Art. 5(1)(f) restricts emotion inference in workplaces and education.

Situation-sensitive emotion recognition should identify and use relevant contextual cues, not infer emotion from isolated signals.