AI Sales Coach - Documentation

Overview

The AI Sales Coach is designed to support sales representatives and managers by providing structured, post-call coaching insights. Its purpose is to reduce the need for manual call reviews while still improving sales performance in a consistent and scalable way. The system analyzes completed sales calls and generates focused, actionable feedback that helps reps improve on future conversations. Importantly, the AI never replaces human judgment; it only provides guidance and insights.

Functional Scope

The AI Sales Coach operates after a sales call has ended. Its responsibilities are intentionally limited and clearly defined:

- Analyze completed sales calls only (no real-time intervention)
- Evaluate rep performance across four core skills
- Identify the weakest improvement areas
- Generate exactly three short coaching tips per call

These tips are intended to be practical and immediately applicable in the representative's next call.

Inputs and Outputs

The system works entirely with mock data for demonstration and evaluation purposes.

Inputs - Sales call transcript (typically 2–3 minutes) - Mock sales representative profile

Outputs - Performance scores for empathy, pacing, objection handling, and closing - Identified top improvement gaps - Three micro-improvement tips - An overall confidence score indicating analysis reliability

This strict input/output boundary ensures predictable and safe behavior.

Processing Flow

Each call follows a clear and repeatable intelligence flow:

1. Load the completed call transcript
2. Extract meaningful signals such as empathy phrases, objections, pacing patterns, and closing attempts
3. Convert signals into transparent performance scores
4. Identify the weakest performance areas
5. Generate three coaching tips
6. Present results to the human user

This flow keeps the system easy to understand, debug, and extend.

Use of Machine Learning

Machine learning is used selectively and only where it adds real value:

- Rule-based logic produces the primary performance scores because it is transparent and explainable
- A lightweight ML model optionally estimates the probability that a call was high quality overall

The ML component never overrides rule-based results. If the ML model is unavailable or fails, the system continues operating normally using rules alone. This design avoids over-dependence on ML while still demonstrating intelligent evaluation.

Use of Large Language Models

A large language model is used only for generating coaching tips in natural language:

- The model receives structured performance data as input
- It produces short, human-readable coaching advice

- Output is strictly validated and expected in structured JSON

If the language model fails or returns invalid data, the system automatically falls back to predefined safe coaching tips. The LLM never interacts with customers and never performs autonomous actions.

Performance Scoring Logic

The AI Sales Coach uses clear, explainable scoring rules so that every score can be understood and audited by humans. Alongside descriptive explanations, the exact equations used for scoring are documented below.

Empathy Score

Empathy is measured by counting acknowledgement and understanding phrases in the transcript. Each detected empathy phrase contributes a fixed amount to the score.

Equation:

Empathy Score = min (100, empathy_hits × 30)

This means that repeated demonstrations of empathy steadily increase the score, while the cap at 100 prevents over-weighting.

Pacing Score

Pacing is evaluated using a simple proxy for long, uninterrupted monologues. Transcript lines longer than a defined threshold are treated as pacing risks. The score starts high and is reduced for each long monologue detected.

Equation:

Pacing Score = clamp(90 − (long_monologue_lines × 20), 0, 100)

Fewer long monologues result in a higher pacing score, indicating a more balanced conversation.

Objection Handling Score

Objection handling depends on whether objections are detected and how the representative responds to them. Two cases are handled explicitly.

If no objections are detected:

Objection Handling Score = 75

If objections are detected:

Base Score = 70

Adjustment:

- +10 if empathy_hits ≥ 2
- −15 if empathy_hits < 2
- −5 × (number_of_objections − 1)

Final Equation:

Objection Handling Score = clamp(Base Score + Adjustments, 0, 100)

This approach rewards acknowledgment of objections while penalizing multiple unresolved concerns.

Closing Score

Closing is evaluated by detecting whether the representative attempted to move the conversation toward a clear next step, such as scheduling a demo or confirming follow-up.

Equation:

Closing Score =

- 85 if closing_attempted = true
- 45 if closing_attempted = false

All scores are normalized to a 0–100 range and are accompanied by short explanatory reasons to ensure interpretability.

Human-in-the-Loop Design

Human control is a core design principle of the AI Sales Coach:

- All coaching tips are suggestions, not decisions
- Reps and managers can ignore, accept, or edit the tips
- Feedback is logged for observability and future improvement

There are no penalties or enforced actions associated with ignoring AI suggestions.

Safety and Governance

Safety mechanisms are built into the system from the start:

- A global kill switch can disable all AI agents
- An agent-level kill switch can disable only the AI Sales Coach
- When a kill switch is active, no analysis or tips are generated

These controls ensure the system can be safely stopped at any time.

Automation Level

The AI Sales Coach currently operates at **Level 1 – Shadow Mode**:

- The AI provides insights and recommendations only
- No actions are automated
- All decisions remain with human users

This level was intentionally chosen to prioritize safety, trust, and clarity during evaluation.

Summary

The AI Sales Coach is a complete post-call coaching system built around a clear and controlled intelligence pipeline. It uses mock data, combines rule-based logic with optional machine learning and language models, and maintains strict human oversight. The agent adheres to all

required phases, including safety and governance mechanisms, and is ready for demonstration and evaluation.