SimInsight

AI-Powered Clinical Interaction Analysis

Technical Product Demo Specification
Full Pipeline: Video Input → Multimodal Analysis → Scored Dashboard

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1. Executive Summary

This document specifies a technical product demo for SimInsight, an AI-powered clinical interaction analysis system. The demo showcases a complete pipeline: a user uploads a clinical simulation recording, the system processes it through multimodal AI analysis (computer vision, NLP, audio processing), and outputs a comprehensive scored dashboard with actionable insights.

The demo is designed for two audiences: technical leaders evaluating integration feasibility (Laerdal VP of Technology, CTO) and clinical educators evaluating pedagogical value (simulation lab directors at Duke HSPSC, UNC SET Center). It must demonstrate both engineering rigor and clinical relevance.

Core Value Proposition: SimCapture records everything that happens in a simulation. SimInsight understands what it means — automatically scoring communication quality, behavioral dynamics, and interaction patterns that predict real-world clinical outcomes.

2. Demo Flow Overview

The demo follows a five-stage pipeline that mirrors the production system architecture. Each stage should be visually represented in the UI, with clear transitions showing data flowing through the system.

2.1 Stage 1: Video Upload & Ingestion

The user sees an upload interface. They drag and drop a clinical simulation video file (MP4, MOV, or AVI). For the demo, include 2-3 pre-loaded sample recordings with labels:

- Sample A: "Medication Counseling — Good Communication" (demonstrates high scores)
- Sample B: "Medication Counseling — Poor Communication" (demonstrates low scores)
- Sample C: "Patient History Intake" (demonstrates different scenario type)

Wireframe: Upload Screen

Full-width layout. Top navigation bar with SimInsight logo (left) and "New Analysis" button (right). Center of screen shows a large drop zone (dashed border, 400px tall) with upload icon and text: "Drop a simulation recording here or click to browse." Below the drop zone, three sample video cards in a horizontal row. Each card shows a thumbnail, title, duration, and "Analyze" button. Bottom of screen shows supported formats and a brief explainer sentence.

Technical note for implementer: The upload accepts video files but the demo does NOT need to actually process video in real-time. Instead, use pre-computed analysis results that are loaded when a sample is selected, with a simulated 8-12 second processing animation to represent the pipeline stages.

2.2 Stage 2: Processing Pipeline Animation

After upload/selection, show an animated processing screen with five sequential stages. Each stage activates in sequence with a progress indicator:

Stage	Label	Duration	Visual Indicator
1	Audio Extraction & Transcription	2s	Waveform animation
2	Speaker Diarization & Role Detection	1.5s	Two silhouette icons separating
3	Pose Estimation, Gaze Tracking & Body Language Analysis	2.5s	Skeleton wireframe overlay with posture/gesture annotations
4	Linguistic & Behavioral Analysis	2s	Text highlight scanning animation
5	Composite Score Generation	1.5s	Radar chart drawing in

Wireframe: Processing Screen

Dark background (navy/charcoal). Center-aligned vertical stepper showing all 5 stages. Active stage pulses with accent color and shows its animation. Completed stages show green checkmarks. Pending stages are grayed out. At the bottom, a horizontal progress bar fills across all stages. Small text below shows elapsed time. The overall feel should be technical and impressive — this is where you demonstrate engineering depth to the VP of Technology.

2.3 Stage 3: Session Overview Dashboard

The main output screen. This is the most important view — it must communicate both technical sophistication (for Laerdal) and clinical utility (for simulation faculty). The dashboard has four main sections arranged in a grid layout.

Section A: Composite Scores (Top Row)

Four score cards in a horizontal row, each showing a large circular progress indicator (0-100), a label, and a one-sentence explanation:

Score	Components	Example Value (Good)	Example Value (Poor)
Communication Quality	Eye contact %, open question ratio, interruption rate, empathy markers	87/100	41/100
Explanation Clarity	Jargon-free language %, teach-back prompts, information chunking	92/100	35/100
Patient Engagement	Patient speaking time %, response latency, back-channel responses	78/100	29/100

Body Language	Forward lean %, open posture %, gesture frequency, proximity, mirroring	83/100	34/100
Adherence Support	Barrier probing, follow-up plan clarity, understanding confirmation	81/100	38/100

Wireframe: Score Cards

Each card is approximately 180px wide (5 cards in a row). Contains a donut chart (120px diameter) with the score number centered inside in large bold text. Color coding: green (75-100), amber (50-74), red (0-49). Below the donut, the score name in bold, then a small gray text showing the primary driver, for example: "Driven by: 72% eye contact, 3 teach-back prompts" or "Driven by: 81% open posture, frequent nodding." Cards should animate in with a counting-up effect when the dashboard loads.

Section B: Behavioral Timeline (Middle Row, Full Width)

A horizontal timeline synchronized to the video recording. This is the most technically impressive component. The timeline spans the full width of the dashboard and shows:

- Video scrubber bar with playback controls (play/pause, skip 10s)
- Speaker track: colored bars showing who is speaking (clinician = blue, patient = orange, silence = gray)
- Gaze track: colored bars showing where the clinician is looking (patient = green, screen/chart = yellow, elsewhere = red)
- Body language track: colored bars showing clinician posture state (open/forward lean = green, neutral = blue, closed/leaning away = red, arms crossed = orange)
- Event markers: vertical pins on the timeline for detected events

Event Types to Display:

Event Type	Icon	Color	Example Tooltip
Empathy phrase	Heart	Green	"I understand this must be difficult" at 02:14
Teach-back prompt	Refresh	Blue	"Can you tell me back what we discussed?" at 04:32
Jargon usage	Alert triangle	Orange	"Hypertension" used without plain-language explanation at 01:45
Closed question	X-circle	Red	"Did you take your meds?" (vs open alternative) at 03:21
Eye contact drop	Eye-off	Red	Clinician looked away during risk explanation at 02:48-03:05
Interruption	Pause	Orange	Clinician interrupted patient at 01:58
Barrier probing	Search	Green	"What might make it hard to take this daily?" at 05:12

Forward lean	Arrow-down-right	Green	Clinician leaned toward patient during concern at 01:12-01:30
Arms crossed	Shield	Orange	Clinician crossed arms during patient question at 03:35-03:52
Nodding/mirroring	Repeat	Green	Clinician nodded during patient explanation at 02:20-02:35
Turned away	Corner-up-right	Red	Clinician turned body toward screen during discussion at 04:10-04:28
Proximity shift	Move	Blue	Clinician moved closer during empathetic moment at 05:02

Wireframe: Behavioral Timeline

Full-width container (padding 24px). At top: small video thumbnail (200px wide) with play button on left, timeline scrubber stretching to the right. Below the scrubber: four horizontal track rows labeled on the left ("Speaker", "Gaze", "Body Language", "Events"). Speaker, Gaze, and Body Language tracks show continuous colored segments. The Body Language track uses green for open/engaged posture, blue for neutral, orange for closed posture (arms crossed, leaning back), and red for turned away. Events track shows marker pins that, on hover, display tooltip cards. Below the tracks: a legend showing all event type icons and their meanings. Clicking any timeline position updates the video thumbnail to that frame.

Section C: Interaction Analytics (Bottom Left)

A radar/spider chart showing 8 dimensions of the interaction:

- Eye Contact Quality (0-100)
- Question Quality (open vs closed ratio)
- Speaking Balance (% patient vs clinician)
- Language Clarity (jargon-free %)
- Empathy Indicators (count normalized)
- Active Listening (back-channel rate)
- Posture Openness (% time in open/forward posture)
- Physical Engagement (proximity, gestures, nodding, mirroring)

The radar chart should overlay the current session on a faded "benchmark" shape representing the average across good performers. This gives immediate visual feedback on where this session excels or falls short.

Wireframe: Radar Chart

Square container (approx 400x400px). Eight-axis radar chart centered. Current session plotted as a filled polygon with accent color (opacity 0.3 fill, solid border). Benchmark overlay as a dashed gray polygon.

Each axis labeled at its endpoint. The two body language axes (Posture Openness and Physical Engagement) should be adjacent on the chart so the body language cluster is visually distinct. Below the chart: a small legend showing "This Session" (accent color) and "Benchmark" (gray dashed).

Section D: Transcript with Annotations (Bottom Right)

A scrollable transcript panel showing the conversation with inline annotations. Each line shows:

- Timestamp (left margin, gray, monospaced)
- Speaker label ("Clinician" or "Patient" in their respective colors)
- Transcript text
- Inline highlights: empathy phrases in green background, jargon in orange background, teach-back prompts in blue background

Clicking a transcript line scrolls the behavioral timeline to that timestamp. Hovering over a highlighted phrase shows a tooltip explaining why it was flagged.

Wireframe: Annotated Transcript

Right-side panel (approx 450px wide, full height of bottom row). Scrollable container with alternating left-aligned (patient) and right-aligned (clinician) message bubbles, similar to a chat interface but with timestamps. Each bubble has the speaker name in small bold text above, then the transcript text. Highlighted phrases within the text use colored background spans. A search/filter bar at the top allows filtering by event type (e.g., show only empathy markers).

2.4 Stage 4: Detailed Metrics View

Accessible via a "View Details" button on each score card. This view provides granular breakdowns for clinical educators who want to understand exactly how a score was computed.

Communication Quality Detail View:

Metric	Value (Good)	Value (Poor)	Measurement Method
Eye contact with patient	72% of session	23% of session	Gaze vector estimation from pose model
Open-ended questions asked	8 (62% of questions)	2 (15% of questions)	NLP question-type classification
Clinician interruptions	1 instance	7 instances	Speaker diarization overlap detection
Empathy phrases detected	5 instances	0 instances	NLP sentiment + empathy lexicon matching

Patient speaking time	42% of conversation	18% of conversation	Speaker diarization time calculation
Average response latency	1.2 seconds	0.4 seconds	Turn-taking gap measurement
Teach-back prompts used	3 instances	0 instances	NLP pattern matching for teach-back phrases
Jargon without explanation	0 instances	6 instances	Medical terminology NLP + explanation detection

The detail view also includes a mini-timeline showing where each metric event occurred in the session, allowing educators to jump to specific moments for targeted debriefing.

Body Language Detail View:

This is a key differentiator — no existing simulation analysis tool provides automated body language scoring. The detail view shows granular posture and gesture analytics derived from pose estimation (MediaPipe or similar). Each metric maps to clinically validated nonverbal communication predictors of patient trust and adherence.

Metric	Value (Good)	Value (Poor)	Measurement Method
Open posture	78% of session	31% of session	Pose estimation: shoulder orientation + arm position classification
Forward lean toward patient	62% of session	18% of session	Torso angle relative to vertical via spine keypoints
Arms crossed duration	3% of session	34% of session	Wrist-to-elbow-to-shoulder angle detection when arms overlap torso midline
Head nodding frequency	24 instances (0.8/min)	4 instances (0.13/min)	Head keypoint vertical oscillation pattern detection
Illustrative gestures	18 instances	3 instances	Hand keypoint velocity + trajectory classification (not fidgeting)
Mirroring behavior	6 instances	0 instances	Pose similarity scoring between clinician and patient skeletons across 2s windows
Average proximity	85cm (close conversational)	140cm (distant)	Hip keypoint distance estimation calibrated to room scale
Proximity shifts toward patient	4 instances	0 instances	Sustained hip keypoint displacement > 15cm toward patient
Body orientation toward patient	88% facing patient	52% facing patient	Shoulder plane angle relative to patient position

Fidgeting / self-touch	2 instances	11 instances	Hand-to-face/hair/clothing contact pattern detection

Body Language Visualization: Posture Heatmap

In addition to the metrics table, the Body Language detail view includes a posture heatmap — a horizontal bar (matching the session timeline) that shows posture state over time using a continuous color gradient. This gives educators an instant visual read on when the clinician was physically engaged vs. withdrawn.

- Green segments: Open posture + forward lean (engaged)
- Blue segments: Neutral upright posture (attentive but passive)
- Orange segments: Closed posture — arms crossed, leaning back (defensive/disengaged)
- Red segments: Turned away from patient, oriented toward screen/door (avoidant)

Below the heatmap, overlay small icons at timestamps where notable body language events occurred (nodding clusters, mirroring, proximity shifts). Clicking any segment opens the corresponding moment in the behavioral timeline.

Body Language Visualization: Skeleton Overlay Snapshots

Show 3-4 key moment snapshots from the session as small thumbnail frames (200x150px each, in a horizontal row). Each thumbnail shows a simplified skeleton wireframe overlaid on a blurred/silhouetted video frame, with annotations pointing to the relevant posture feature:

- Snapshot 1: "02:14 — Forward lean during empathy phrase" with arrow showing torso angle
- Snapshot 2: "03:35 — Arms crossed during patient question" with highlighted arm position
- Snapshot 3: "05:02 — Proximity shift closer during barrier discussion" with distance annotation
- Snapshot 4: "04:10 — Body turned toward screen" with shoulder plane arrow

For the demo, these can be static placeholder images with skeleton wireframe graphics overlaid. They do not need to be generated from actual video — use illustrative SVG skeleton diagrams showing the described posture states. The visual purpose is to show the audience that the system interprets body positioning, not just records it.

Clinical Basis for Body Language Scoring:

Each body language metric maps to peer-reviewed evidence on nonverbal communication in clinical settings. Include a small expandable "Evidence" tooltip or info icon next to each metric that shows the clinical rationale:

- Forward lean: Associated with perceived empathy and patient satisfaction (Harrigan et al., 1985; Griffith et al., 2003)
- Open posture: Correlated with patient trust and willingness to disclose symptoms (Mehrabian, 1968)
- Nodding: Increases patient perception of being heard; linked to longer patient narratives (Robinson, 2006)
- Proximity: Closer (appropriate) distance associated with higher rapport scores (Hall, 1966; Hayduk, 1983)
- Mirroring: Unconscious postural matching correlates with empathy and therapeutic alliance (Chartrand & Bargh, 1999)
- Arms crossed: Associated with perceived defensiveness and reduced patient openness (Harrigan et al., 2004)

2.5 Stage 5: Comparison & Longitudinal View

This view demonstrates the cohort analytics capability that would be new for SimCapture. For the demo, use pre-loaded data showing:

- Side-by-side comparison: Good vs Poor session scores in paired bar charts
- Trend lines: A mock learner's scores across 5 simulation sessions showing improvement over time
- Cohort distribution: Bell curve showing where the current session falls relative to a mock cohort of 50 learners

Wireframe: Comparison View

Tab-based navigation at the top: "Session Comparison" | "Learner Progress" | "Cohort Analytics". Session Comparison tab shows two score card rows side by side with a delta column in the middle (green up arrows for improvements, red down arrows for regressions). Learner Progress tab shows a line chart with 4 score lines (one per composite metric) across 5 sessions on the x-axis, clearly showing upward trends. Cohort Analytics tab shows a histogram/bell curve with the current session marked as a vertical line.

3. Sample Data Specification

The demo requires two complete pre-computed datasets. Below are the exact values to use for each. These are designed to clearly differentiate good and poor communication for demonstration purposes.

3.1 Sample A: Good Communication

Scenario: A clinician counsels a patient on a new blood pressure medication. The clinician demonstrates patient-centered communication.

Composite Scores:

Metric	Score	Grade
Communication Quality	87	Excellent
Explanation Clarity	92	Excellent
Patient Engagement	78	Good
Body Language	83	Good
Adherence Support	81	Good

Transcript Excerpt (first 60 seconds):

Time	Speaker	Text	Flags
00:02	Clinician	Good morning! How are you feeling today?	Open question, Forward lean
00:06	Patient	I'm okay, a little nervous about the new medication.	
00:12	Clinician	I completely understand that feeling. A lot of patients feel the same way when starting something new. Let me walk you through everything so you feel comfortable.	Empathy phrase, Nodding, Open posture
00:24	Patient	That would be great, thank you.	
00:27	Clinician	So your doctor has prescribed lisinopril. It's a common blood pressure medication. Basically, it helps relax your blood vessels so your heart doesn't have to work as hard.	Plain language, Gesturing (illustrative)
00:42	Patient	Okay, that makes sense.	
00:44	Clinician	What questions do you have about that so far?	Open question, Teach-back, Leaning forward
00:48	Patient	Will it make me feel different? Like dizzy or anything?	
00:53	Clinician	Great question. Some people do feel a bit lightheaded in the first few days, especially when standing up quickly. That usually goes away. If it doesn't, we should talk about it.	Side-effect discussion, Nodding, Proximity closer

3.2 Sample B: Poor Communication

Same scenario, but the clinician demonstrates clinician-centered communication patterns.

Composite Scores:

Metric	Score	Grade

Communication Quality	41	Needs Improvement
Explanation Clarity	35	Needs Improvement
Patient Engagement	29	Poor
Body Language	34	Needs Improvement
Adherence Support	38	Needs Improvement

Transcript Excerpt (first 60 seconds):

Time	Speaker	Text	Flags
00:02	Clinician	Alright so you're here for a med consult. Your PCP prescribed lisinopril, an ACE inhibitor for your hypertension.	Jargon: ACE inhibitor, hypertension, Arms crossed
00:12	Patient	Um, what's an ACE—	
00:14	Clinician	It's standard for your condition. Take 10mg once daily in the morning. You might get a cough, that's normal.	Interruption, No explanation, Leaning back
00:23	Patient	A cough? For how long?	
00:25	Clinician	It varies. Also monitor for hyperkalemia and angioedema, though those are rare. Any renal impairment history?	Jargon x3, Closed question, Turned to screen
00:35	Patient	I... I'm not sure what those mean.	
00:38	Clinician	They're side effects. Just watch for swelling of the face or lips, and come to the ER if that happens. Do you take potassium supplements?	Closed question, No mirroring
00:48	Patient	No, I don't think so.	
00:50	Clinician	Good. Take it consistently, same time every day. Don't miss doses. Your follow-up is in 4 weeks.	No barrier probing, Leaning away, Checking clock

4. Technical Architecture

This section specifies the technical implementation for the demo. The demo should be a single-page React application with simulated processing (no actual backend ML pipeline needed for the demo).

4.1 Tech Stack

Layer	Technology	Purpose
Framework	React 18+ with hooks	Component architecture
Styling	Tailwind CSS	Utility-first styling
Charts	Recharts or D3.js	Radar charts, bar charts, line charts, donut charts
Icons	Lucide React	Event type icons, UI icons
Animation	Framer Motion or CSS transitions	Processing pipeline, score count-up, chart drawing
State	React Context or zustand	Session data, view navigation
Video	HTML5 video element	Thumbnail display, playback sync

4.2 Component Architecture

The application should be structured as follows:

- App.jsx — Root component, manages current view state (upload / processing / dashboard)
- UploadView.jsx — Drop zone + sample video cards
- ProcessingView.jsx — Animated 5-stage pipeline stepper
- DashboardView.jsx — Main dashboard layout with grid
- ScoreCard.jsx — Reusable donut chart score component (props: score, label, description, color)
- BehavioralTimeline.jsx — Multi-track timeline with events (most complex component)
- RadarChart.jsx — Eight-axis interaction analytics chart
- BodyLanguagePanel.jsx — Posture heatmap, gesture timeline, and proximity visualization
- AnnotatedTranscript.jsx — Scrollable chat-style transcript with highlights
- DetailView.jsx — Expanded metric breakdown for each score
- ComparisonView.jsx — Side-by-side, trend, and cohort views
- data/sampleA.json — Pre-computed good session data
- data/sampleB.json — Pre-computed poor session data

4.3 Data Schema

Each sample session JSON file should follow this structure:

```
sessionData: {
  id: string,
  title: string,
  duration_seconds: number,
  scenario: string,
  scores: {
    communication_quality: { value: number, grade: string, drivers: string[] },
    explanation_clarity: { value: number, grade: string, drivers: string[] },
    patient_engagement: { value: number, grade: string, drivers: string[] },
    adherence_support: { value: number, grade: string, drivers: string[] }
  },
  radar: { eye_contact: n, question_quality: n, speaking_balance: n,
           language_clarity: n, empathy: n, active_listening: n,
           posture_openness: n, physical_engagement: n },
  timeline: {
    speaker_segments: [{ start: n, end: n, speaker: 'clinician'|'patient' }],
    gaze_segments: [{ start: n, end: n, target: 'patient'|'screen'|'other' }],
    body_segments: [{ start: n, end: n, state: 'open'|'neutral'|'closed'|'away' }],
    events: [{ time: n, type: string, label: string, detail: string }]
  },
  transcript: [{ time: string, speaker: string, text: string, flags: string[] }],
  metrics: {
    eye_contact_pct: number, open_question_ratio: number,
    interruption_count: number, empathy_count: number,
    patient_speaking_pct: number, avg_response_latency: number,
    teachback_count: number, jargon_unexplained_count: number,
    open_posture_pct: number, forward_lean_pct: number,
    nod_count: number, gesture_count: number,
    mirroring_instances: number, arms_crossed_pct: number,
    avg_proximity_cm: number, proximity_shifts: number
  },
  longitudinal: [{ session: n, scores: { ... } }]  // for trend view
}
```

5. Design System

The demo should feel clinical, trustworthy, and data-rich — not like a consumer app. Think: Bloomberg Terminal meets medical dashboard. The aesthetic should communicate precision and reliability.

5.1 Color Palette

Name	Hex	Usage
Deep Navy	#0F172A	Primary background, headers
Slate	#1E293B	Card backgrounds, secondary surfaces
Clinical Teal	#0D9488	Primary accent, positive scores, CTAs
Warm Amber	#F59E0B	Warning, medium scores, jargon highlights
Alert Red	#EF4444	Poor scores, interruptions, negative events
Insight Blue	#3B82F6	Information, teach-back, links
Clean White	#F8FAFC	Text on dark backgrounds, cards on light mode
Muted Gray	#94A3B8	Secondary text, labels, borders

5.2 Typography

Element	Font	Size	Weight
Page headers	DM Sans or Plus Jakarta Sans	28-32px	700
Section headers	DM Sans or Plus Jakarta Sans	20-24px	600
Body text	DM Sans or Plus Jakarta Sans	14-16px	400
Score numbers	JetBrains Mono or Space Mono	36-48px	700
Timestamps	JetBrains Mono or Space Mono	12px	400
Labels/captions	DM Sans or Plus Jakarta Sans	12px	500

5.3 Layout Principles

- Dark mode primary (conveys seriousness and data density)
- Card-based layout with subtle borders (1px #334155) and 8-12px border radius
- Generous spacing between sections (24-32px gaps)
- Consistent 24px padding inside all cards
- Score colors: Green (#0D9488) for 75-100, Amber (#F59E0B) for 50-74, Red (#EF4444) for 0-49

- Smooth transitions (300ms ease) for all state changes
- Loading skeletons during processing, not spinners

6. Interaction & Behavior Specifications

6.1 Upload Flow

1. User lands on upload screen with 3 sample videos pre-loaded
2. User clicks "Analyze" on a sample OR drags their own file
3. Upload screen fades out (300ms), processing screen fades in
4. 5-stage processing animation runs sequentially (total ~10 seconds)
5. Processing screen transitions to dashboard with a smooth slide-up
6. Dashboard scores animate in with count-up effect (0 to final value over 1.5s)

6.2 Dashboard Interactions

- Score cards: Hover shows tooltip with score drivers. Click opens Detail View as a slide-in panel from the right.
- Timeline: Click any position to update the transcript scroll position. Hover events show tooltip cards with event details. Drag to scrub through the timeline.
- Transcript: Click any line to scroll timeline to that timestamp. Highlighted phrases show tooltip on hover explaining the flag. Filter dropdown at top to show only specific event types.
- Radar chart: Hover any axis to see exact value. Toggle benchmark overlay on/off.
- Navigation: Top tabs for "Dashboard" | "Details" | "Comparison". Sample switcher dropdown to toggle between Sample A and Sample B without re-processing.

6.3 Comparison View Interactions

- Session Comparison: Side-by-side view auto-populates when both samples have been analyzed. Delta column shows percentage point differences with up/down arrows.
- Learner Progress: Line chart with 5 data points per metric. Hover shows exact values. Toggle individual metric lines on/off via legend clicks.
- Cohort Analytics: Histogram with current session marked. Hover bars to see count. Display percentile rank prominently (e.g., "This session is in the 84th percentile").

7. Demo Script (Presentation Guide)

This section provides a suggested walkthrough for presenting the demo in a 15-20 minute meeting. Adapt based on whether the audience is technical (Laerdal) or clinical (Duke/UNC).

7.1 Opening (2 minutes)

"SimCapture is great at recording what happens in a simulation. But right now, understanding what that interaction means — whether the clinician communicated effectively — requires manual review by an instructor. What if that understanding could be automated?"

Click "Analyze" on Sample A. While processing animation runs, briefly explain each stage.

7.2 Dashboard Walkthrough — Good Session (5 minutes)

Walk through each dashboard section. For technical audiences, emphasize the multimodal pipeline (gaze + NLP + audio = composite score). For clinical audiences, emphasize: "Notice it detected 3 teach-back prompts and flagged exactly where the clinician used plain language vs. jargon."

Click into the timeline. Show how events are mapped to specific moments. Show the annotated transcript.

7.3 Contrast with Poor Session (5 minutes)

Switch to Sample B. Let the score differences speak for themselves. Point out: "Same scenario, completely different communication patterns. The system detects 7 instances of unexplained jargon, 7 interruptions, and only 18% patient speaking time."

Navigate to the Comparison view. Show side-by-side scores. For clinical audiences: "Imagine being able to show a resident exactly where their communication broke down, with specific timestamps and evidence."

7.4 Longitudinal View (3 minutes)

Switch to the Learner Progress tab. Show the trend lines. "Over 5 simulation sessions, this learner's communication quality improved from 52 to 87. We can measure whether training interventions actually work."

Show the Cohort view. "Across a class of 50 students, we can identify who needs additional communication coaching and track program-level outcomes."

7.5 Close (2 minutes)

For Laerdal: "This integrates with SimCapture's existing recording infrastructure. Your platform captures the data — we add the intelligence layer that makes it actionable."

For Duke/UNC: "I'd love to run this on 5-10 of your simulation recordings to validate the scoring against your instructors' manual assessments. Would you be open to a small pilot?"

8. Key Points to Emphasize by Audience

8.1 For Laerdal VP of Technology / CTO

- Multimodal pipeline: Not just NLP on transcripts (which they already have) — this combines gaze tracking, pose estimation, body language analysis, speaker diarization, and linguistic analysis into composite behavioral scores. The body language scoring alone is a capability no competitor offers.
- Integration path: Designed to layer on top of SimCapture recordings. No hardware changes needed. Video in, scores out.
- Competitive moat: No one else in the simulation space does automated interaction quality scoring with body language analysis. This is a new product category. Pose estimation from standard video cameras means zero additional hardware cost.
- Samaritan alignment: Their AI brand (Samaritan) focuses on responsible AI for healthcare. This extends that vision from "AI-assisted evaluation creation" to "AI-assisted interaction understanding."
- Data flywheel: Every scored session improves the models. The more SimCapture recordings processed, the better the benchmarks become.

8.2 For Simulation Faculty (Duke/UNC)

- Time savings: Manual debriefing reviews take 30-45 minutes per session. This produces objective scores in seconds.
- Consistency: Different instructors score differently. This provides a standardized, evidence-based baseline.
- Specific, actionable feedback: Not just "your communication was poor" but "at 2:48, you broke eye contact during the risk discussion, crossed your arms at 3:35 during the patient's question, and used the term 'angioedema' without explanation." Body language feedback is particularly powerful because clinicians are often unaware of their nonverbal cues.

- Longitudinal tracking: For the first time, quantify whether your simulation curriculum actually improves communication skills over time.
- Research value: This generates structured data about communication patterns that could power publications on simulation-based education effectiveness.

9. Implementation Notes for AI Code Generator

When using this specification to generate a working demo, prioritize the following:

1. Start with the data: Create the two complete sampleA.json and sampleB.json files first, using the exact values and transcripts specified in Section 3. Every component depends on this data.
2. Build the dashboard first: The Session Overview Dashboard (Section 2.3) is the most important view. Get Score Cards, Behavioral Timeline, Radar Chart, and Annotated Transcript working before building Upload and Processing views.
3. Processing animation is visual polish: The 5-stage processing pipeline (Section 2.2) is a UI animation — it does not need to process anything. Use setTimeout to step through stages.
4. Make the timeline interactive: The Behavioral Timeline is the most technically impressive component. Invest effort in making the multi-track visualization smooth, the event markers hoverable, and the transcript sync functional.
5. Score count-up animation: When the dashboard loads, scores should animate from 0 to their final value over 1.5 seconds. Use requestAnimationFrame or a library like react-countup.
6. Dark mode by default: Use the dark color palette from Section 5.1. This conveys data seriousness and makes the colored scores pop visually.
7. Responsive is secondary: Optimize for a 1440px+ widescreen display (presentation on laptop/projector). Mobile responsiveness is not needed for the demo.
8. Include the comparison view: This is what differentiates the product from a simple analysis tool. The side-by-side, trend lines, and cohort histogram demonstrate platform-level value.

— End of Specification —