# Conversense

Comprehensive digital solution to enhance doctor-patient communication skills for medical students



## Problem

Implicit bias plays a critical role in doctor-patient interactions, significantly influencing patient health outcomes. Such biases, often subconscious, can impact the quality of care delivered, affecting the accuracy of diagnoses, the effectiveness of treatments, and the overall patient experience.

The presence of implicit bias in these interactions not only compromises healthcare quality but also access and equity, leading to disparities that disproportionately affect marginalized groups.

However, currently, there is no formal training or effective medium of feedback present to facilitate enhancement of implicit bias and social signals of medical students.

## Solution

We created a comprehensive digital tool that aims to help medical students to understand and improve patient communication skills. We include features that analyze social signal scoring and trend analysis, provides actionable plans, and an educational hub, helping students to gain a comprehensive understanding about their patient interaction.

# **Key Features**

Compare Visits

Resources Abo



User is able to see comprehensive explanation of social signals and how it is related to implicit bias and patient outcome

onverSense	Visit1	Visit2	Compare Visits Resources About	Upload Data
			Assertiveness	
			Assertiveness refers to showing dominance	
			$ \begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & $	
		<	Interruptions     Prominent posture	>
			The expression level for other clinicians is Average.	

User is able to see comprehensive ananalysis, including score, trends, and video playback related to their performance

ConverSense	Visit1	Visit2	Compare Visits	Resources	About					Upload
					W	Vhat You C	Can Do			

#### **Detailed features include:**

1. Data visualization: Enable students to dive deeper to understand detailed performance trends.

2. Compare visits: Enable students to compare different visits and identify difference and improvements.

3. Video playback: Provide contextual insights for students to understand their detailed interactions in Standardized Patient visits. 4. Education resource: Help students to learn and improve their patient interaction skills.

### **Process**

We followed a user-centered approach, our core users are medical students who regularly attend standardized patient (SP) sessions to improve their skills. We conducted user and SME interviews to understand student's frustrations and urgent needs, and consulted a research team to collect insights and advice.

During the design and development process, we follow an iterative process, where we regularly check with implicit bias experts, and conduct usability testing and heuristic evaluation to iteratively





User is able to compare different visits' statistics to identify trends and understand their improvements.

# **Software Architecture**

Take an implicit association test (IAT)	Complete a w training on im	eb-based plicit bias	Catch a talk by a leading implicit bias researcher		
<ul> <li>• Take an Implicit Association Test</li> <li>• See FAQs about IAT</li> </ul>			Implicit Bias         Matzarin Banaji, Opinion Science podcast (1:14 min)		
<ul> <li>Learn about how implicit bias is through nonverbal patient-provi communication</li> <li>Dovidio JF, Kawakami K, Gaertner SL. Implicit and interracial interaction. Journal of persona psychology. 2002 Jan;82(1):62.</li> <li>Cooper LA, Roter DL, Carson KA, Beach MC, Inui TS. The associations of clinicians' implici with medical visit communication and patient care. American Journal of Public Health. 2012</li> </ul>	expressed ider t and explicit prejudice ality and social Sabin JA, Greenwald AG, it attitudes about race t ratings of interpersonal 2 May;102(5):979-87.	<ul> <li>Learn how research can guide education efforts address implicit bias in healthcare</li> <li>Gonzalez CM, Lypson ML, Sukhera J. Twelve tips for teaching im bias recognition and management. Medical teacher. 2021 Dec 2;43(12):1368-73.</li> <li>Vela MB, Erondu AI, Smith NA, Peek ME, Woodruff JN, Chin MH. Eliminating explicit and implicit biases in health care: evidence ar research needs. Annual review of public health. 2022 Apr 5;43:4 501.</li> </ul>			

#### User is able to view educational resources to learn and

improve.



#### improve our solution, ensuring the solution is able to align with users'

needs.

