An Unbabel spin-off 🚀

Halo

Augmenting Human Communication with AI

Catarina Farinha

20th February 2025

Hi, I’m Catarina!

ACADEMIC BACKGROUND

- Master in Biomedical Engineering @ Instituto Superior Técnico (IST)
- PhD in Computational Psychiatry @ Faculdade de Medicina da Universidade de Lisboa (iMM)

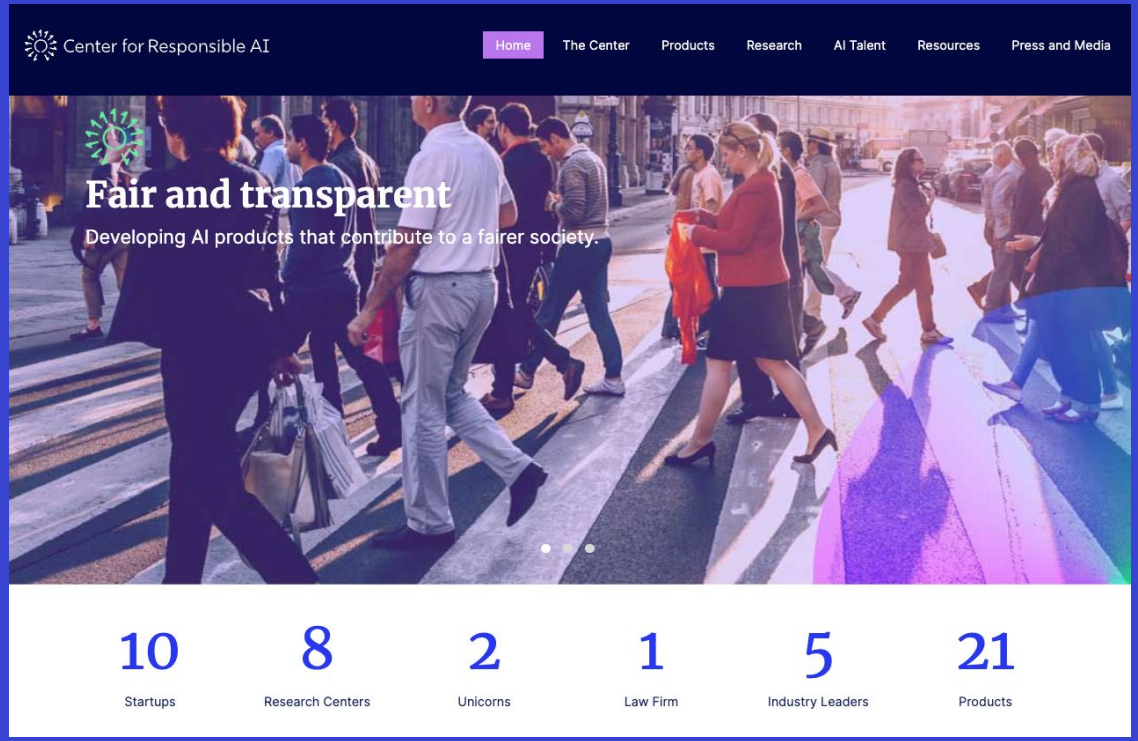
PROFESSIONAL JOURNEY

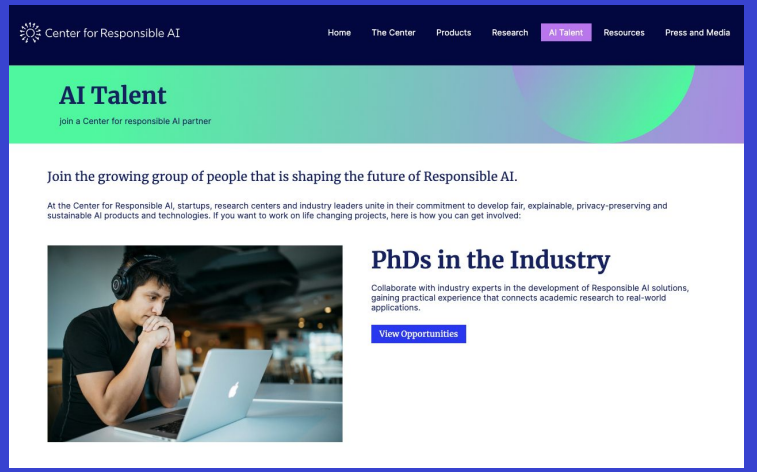
- AI Research Scientist @ Unbabel (2019-2023)
- AI Research Manager @ Unbabel Labs (2023-now)
- Product Lead @ Center for Responsible AI (2023-now)

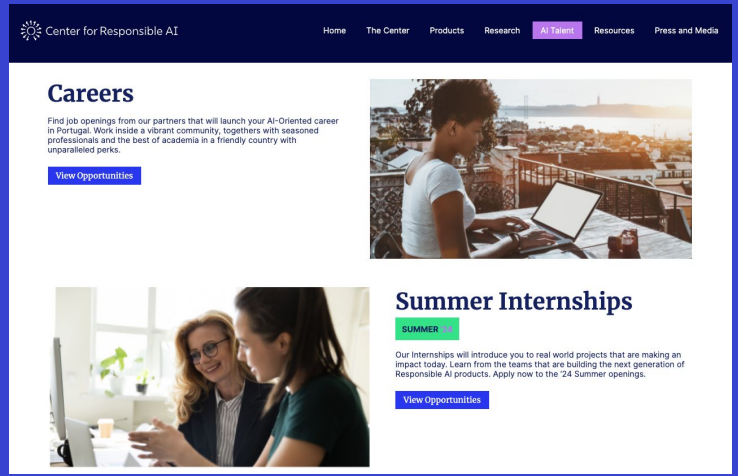
PERSONAL PROJECTS

- Data Science for Social Portugal Lead Team (2019-now)
- Portuguese Executive Women in Tech lead by Amazon (2023-now)

CENTER FOR RESPONSIBLE AI

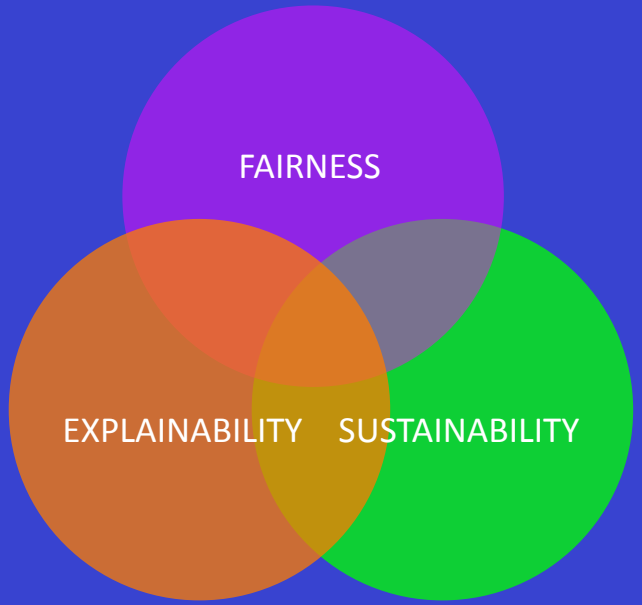






Center for Responsible AI Pillars

Center for Responsible AI



Center for Responsible AI Pillars

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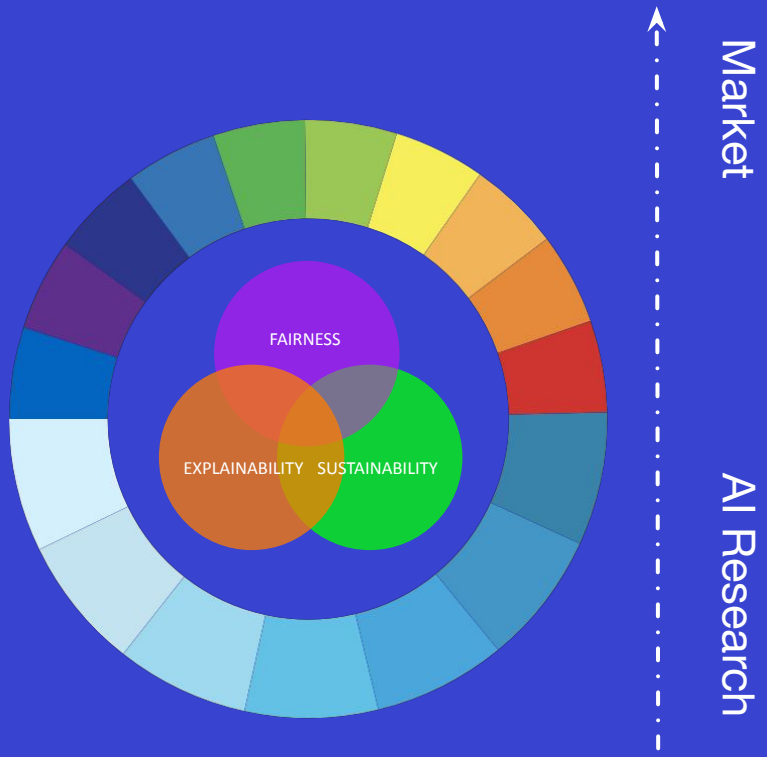

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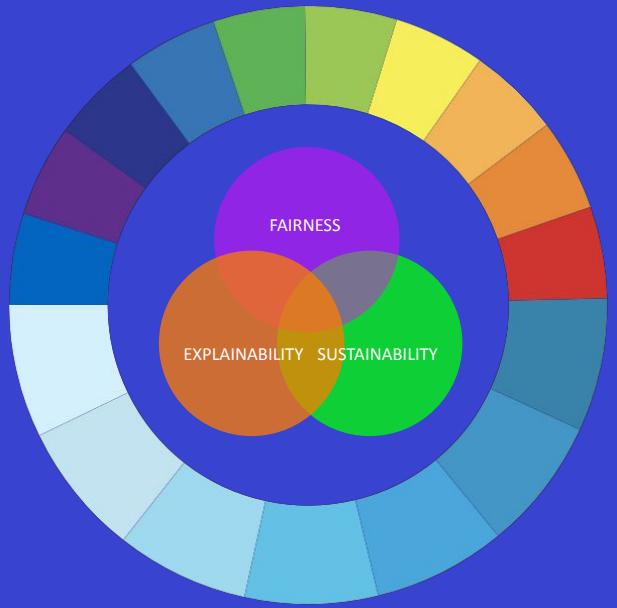

- Champalimaud Foundation
- CISUC
- FEUP
- Fraunhofer Portugal AICOS
- INESC-ID
- ISR-Lisboa
- IT

Center for Responsible AI Pillars

Center for Responsible AI

- Automaise
- Emotai
- NeuralShift
- Priberam
- Sword Health
- Unbabel
- VdA
- Visor.ai
- YData
- Yoonik

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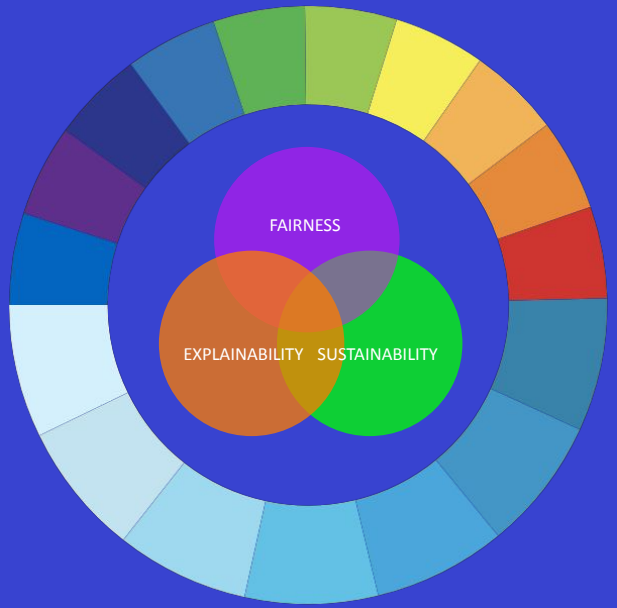

Market

AI Research

Center for Responsible AI Pillars

Center for Responsible AI

- Feedzai
- BIAL, Hospital de São João, Hospital da Luz
- Pestana Group
- SONAE
- Automaise
- Emotai
- NeuralShift
- Priberam
- Sword Health
- Unbabel
- VdA
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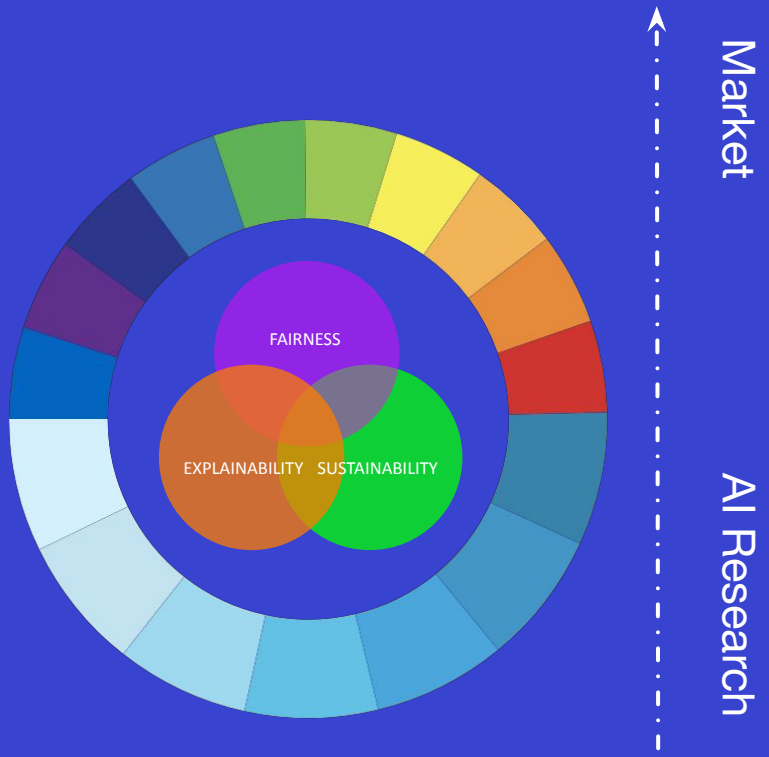

Center for Responsible AI Pillars

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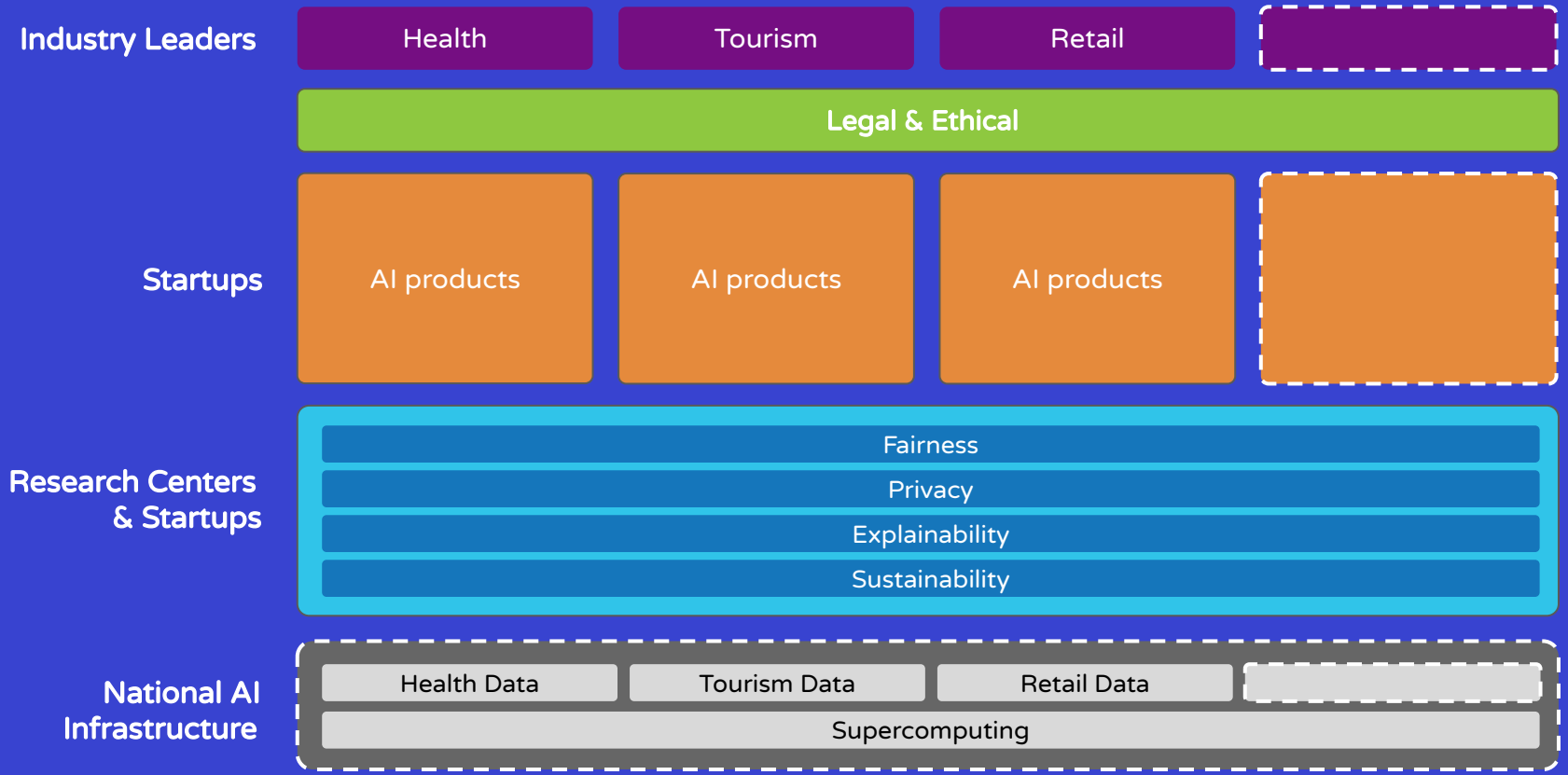


Center for Responsible AI
21
Products
using
Responsible AI
SAO JOÃO
PORTO
PESTANA
CASINO PARK HOTEL

An Unbabel spin-off 🚀

Halo

Augmenting Human Communication with AI

The problem

Stephen Hawking

Theoretical physicist, cosmologist, and author

Lived with ALS for 50-plus years

Anterior
Sim
Sim/Não
Quero dizer algo. Dá-me um bocadinho para escrever
Não
zzz
Pausa
Novo SMS para: Cláudia Apela
Falar
Enviar
Selecionar & Copiar
Colar
Não
Bom
Boa
Anular limpar
Apagar
apagar letra
apagar palavra
Q W E R T Y U I O P
A S D F G H J K L Ç
teclado correção
Z X C V B N M
1 2 3

Product Pod

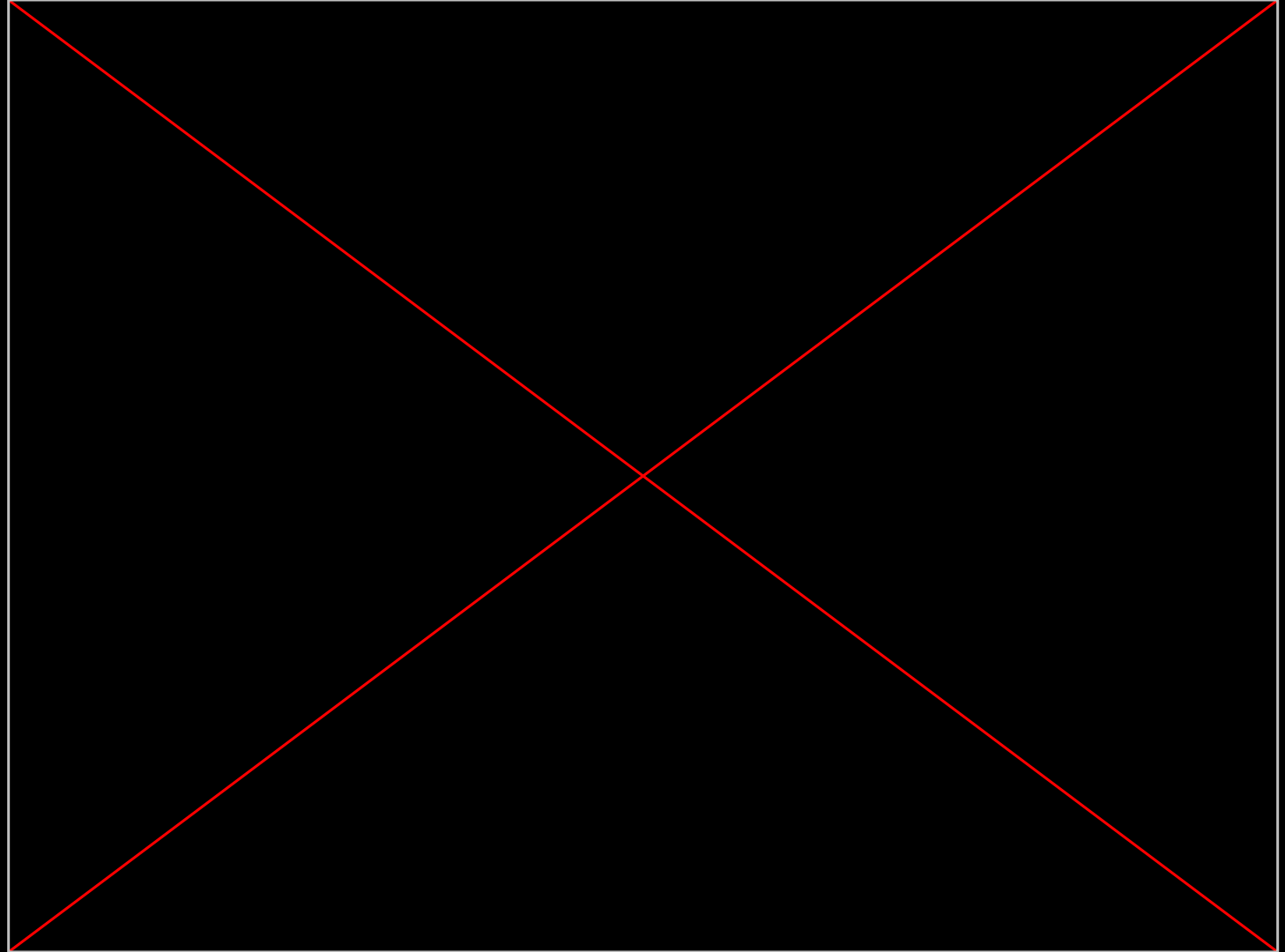
Halo's product pod

Center for Responsible AI

- Unbabel
- IT
- Fraunhofer Portugal AICOS
- INESC-ID
- ISR
- Champalimaud Foundation
- Hospital de São João

apela
associação portuguesa
de esclerose lateral amiotrófica

DEMO



Halo Proprietary AI System

Halo Headband

Advanced hardware for neural signal detection and real-time processing, no calibration needed.

Headphones

Audio interface, hands-free, freedom to move.

App

Speech recognition and voice cloning.

AI Persona

Personal LLM using Retrieval Augmented Generation (RAG) and vector database with user preferences.

Hello, do you need any help now?

I would love a strawberry milkshake

Live, in-person speech.

Integration with WhatsApp for text messaging.

Halo

AI Persona

Conversas

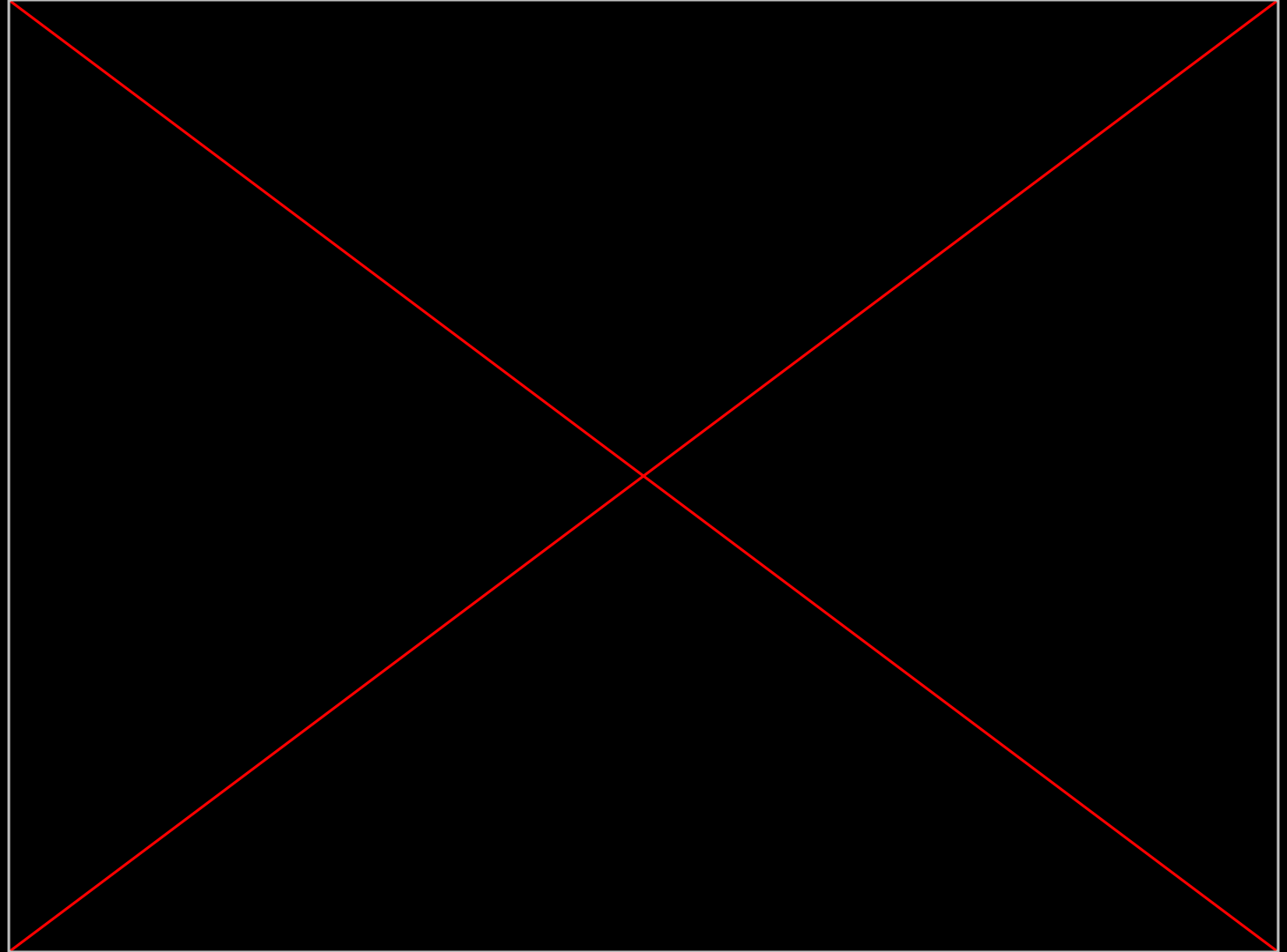
Entrevistas

Preferências

Relações

Convicções

Halo Multimodality



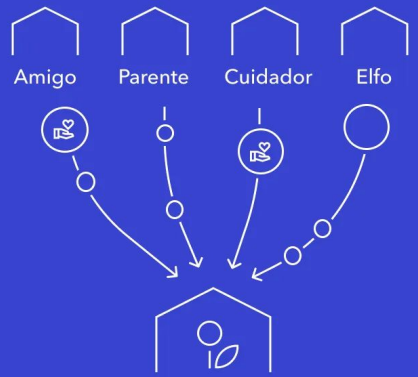
Halo Ecosystem

Sistema Halo

Halo Home

1 Recolhemos memórias (de Natal) de todas as pessoas à nossa volta

Construir a memória do Halo é uma tarefa colaborativa



As memórias são privadas e guardadas em segurança dentro de cada Home.

2 IA recolhe factos relevantes das memórias

Recolhe nomes, vozes, expressões, gostos pessoais

3 O Halo usa as memórias para criar novas mensagens

Agora tem mais informação sobre os gostos de cada um. O Halo gera melhores frases no tom do utilizador.

Os utilizadores Halo usam estas memórias para gerar novas frases que enviam através das suas duas plataformas:

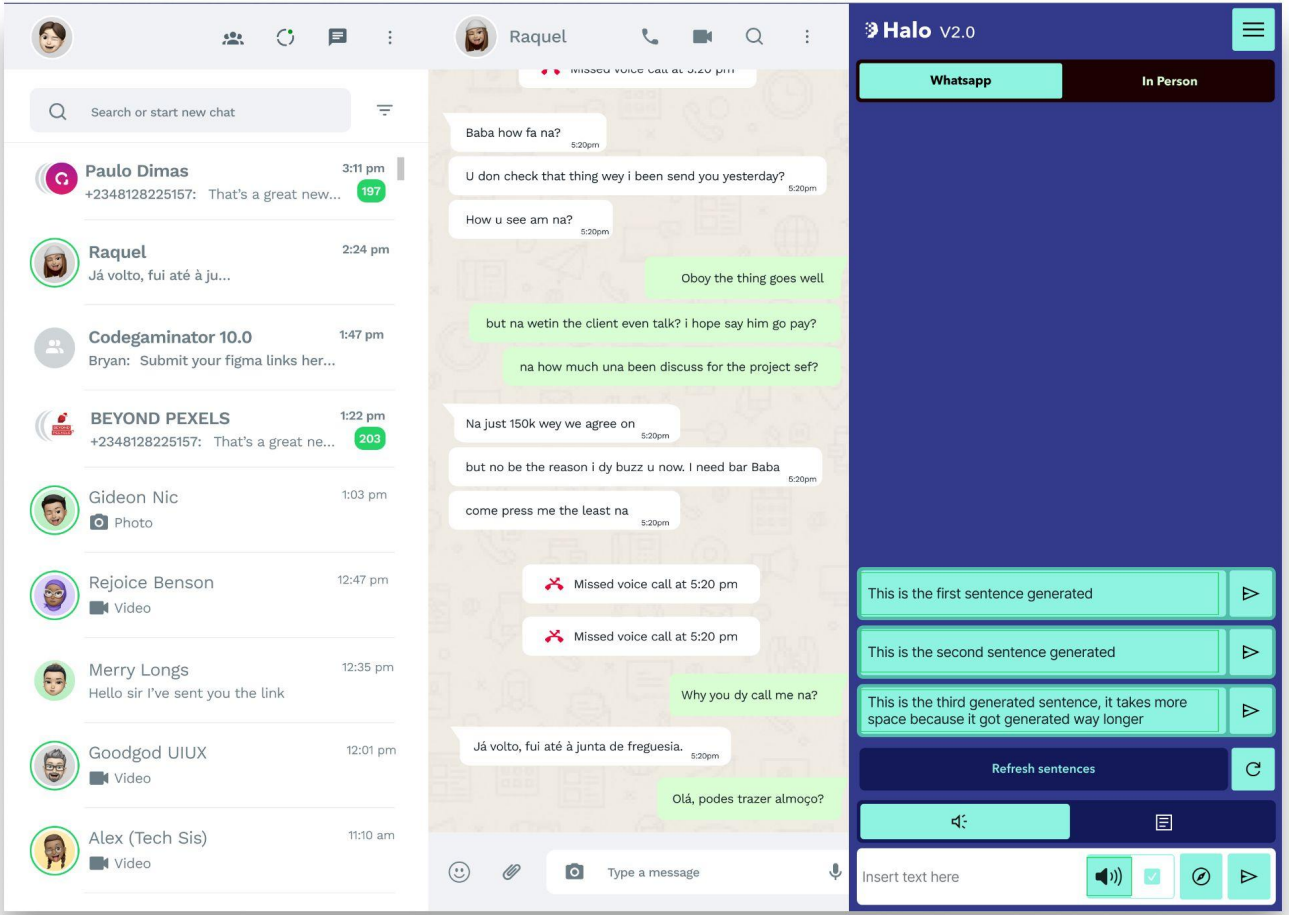
Halo Headband

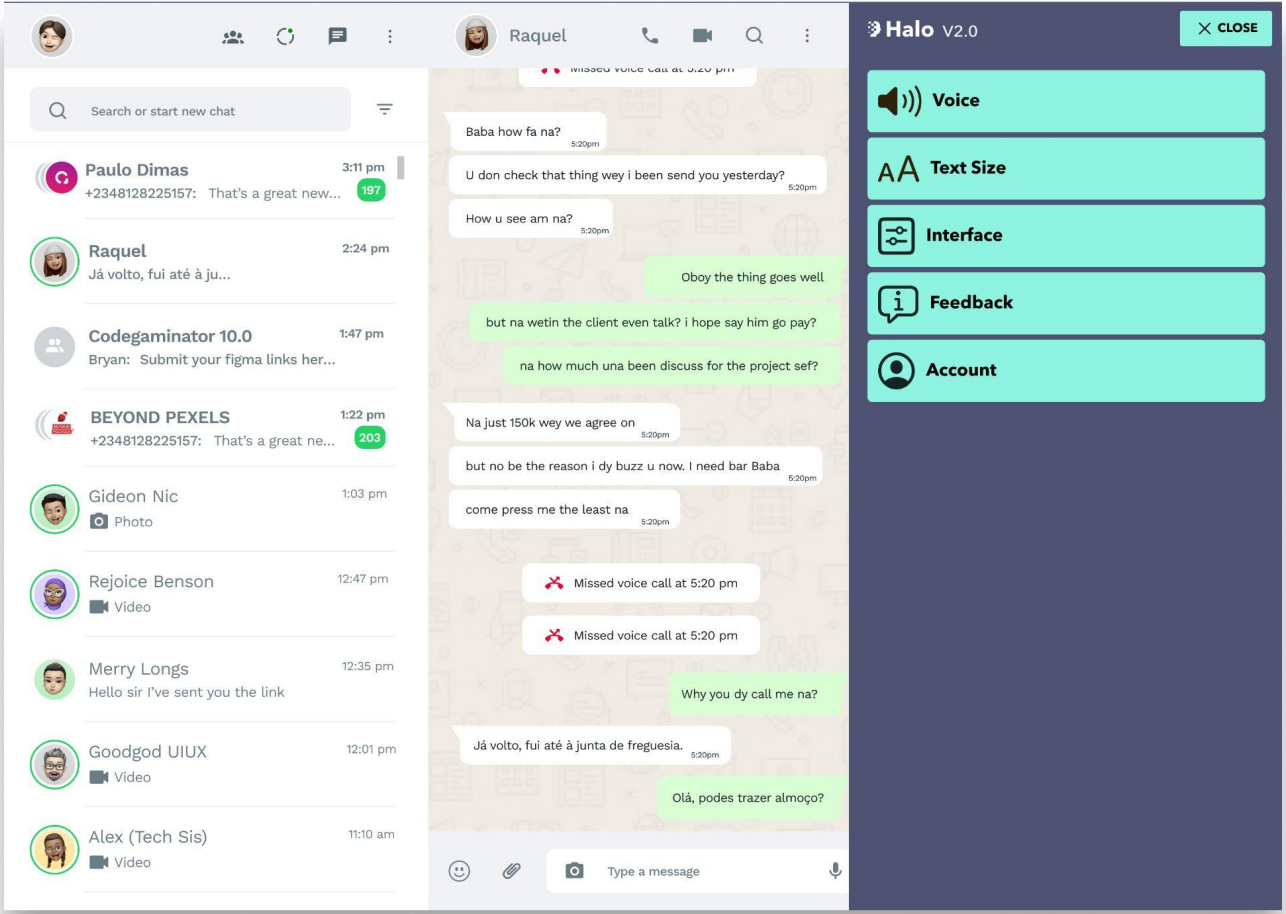
A Headband captura biosinais que transforma em mensagens. Estas são enviadas pela App Halo.

Halo Sidebar

NOVA VERSÃO

Usando eye-trackers, a Sidebar gera frases que envia como texto ou em voz, em tempo real.


Search or start new chat
Paulo Dimas
3:11 pm
+2348128225157: That's a great new...
197
Raquel
2:24 pm
Já volto, fui até à ju...
Codegaminator 10.0
1:47 pm
Bryan: Submit your figma links her...
BEYOND PEXELS
1:22 pm
+2348128225157: That's a great ne...
203
Gideon Nic
1:03 pm
Photo
Rejoice Benson
12:47 pm
Video
Merry Longs
12:35 pm
Hello sir I've sent you the link
Goodgod UIUX
12:01 pm
Video
Alex (Tech Sis)
11:10 am
Video
Raquel
Baba how fa na?
5:20pm
U don check that thing wey i been send you yesterday?
5:20pm
How u see am na?
5:20pm
Oboy the thing goes well
but na wetin the client even talk? i hope say him go pay?
na how much una been discuss for the project sef?
Na just 150k wey we agree on
5:20pm
but no be the reason i dy buzz u now. I need bar Baba
5:20pm
come press me the least na
5:20pm
Missed voice call at 5:20 pm
Missed voice call at 5:20 pm
Why you dy call me na?
Já volto, fui até à junta de freguesia.
5:20pm
Olá, podes trazer almoço?
Type a message
Halo V2.0
Whatsapp
In Person
This is the first sentence generated
This is the second sentence generated
This is the third generated sentence, it takes more space because it got generated way longer
Refresh sentences
Insert text here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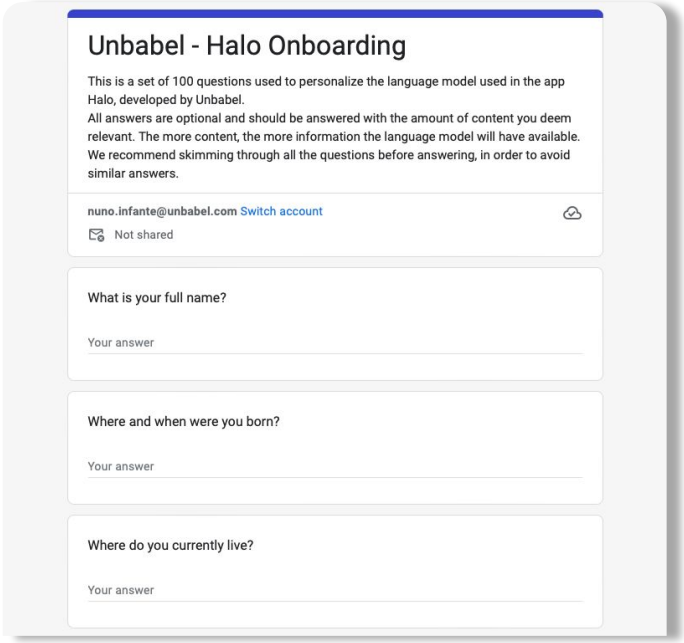
come press me the least na
5:20pm
Missed voice call at 5:20 pm
Missed voice call at 5:20 pm
Why you dy call me na?
Já volto, fui até à junta de freguesia.
5:20pm
Olá, podes trazer almoço?
Type a message
Halo V2.0
CLOSE
Voice
Text Size
Interface
Feedback
Account

Halo Home

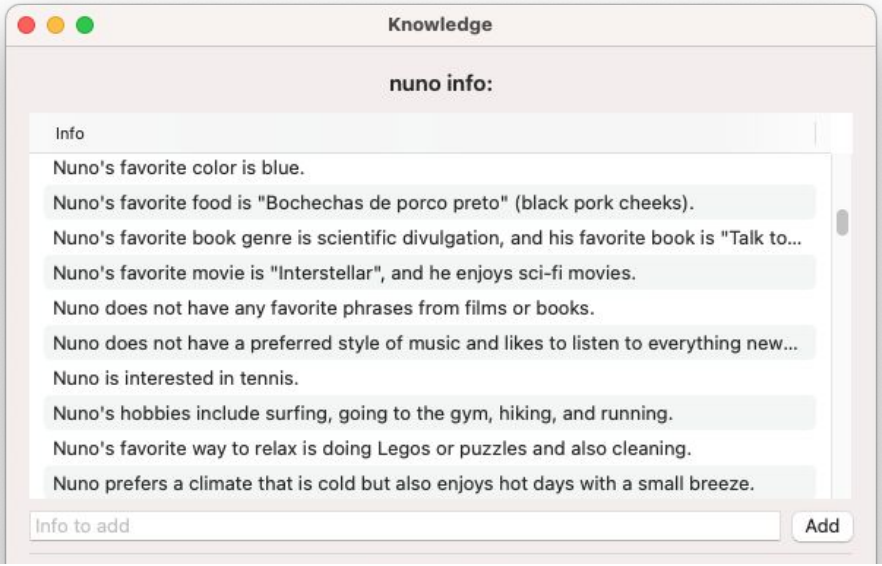
Basic onboarding

- Questionnaire with personal questions
- Information from family and therapeutics
- Past conversations

...



Answers are converted to a simple and clear format using GPT-4



Unbabel Persona

Sign in

Caretaker

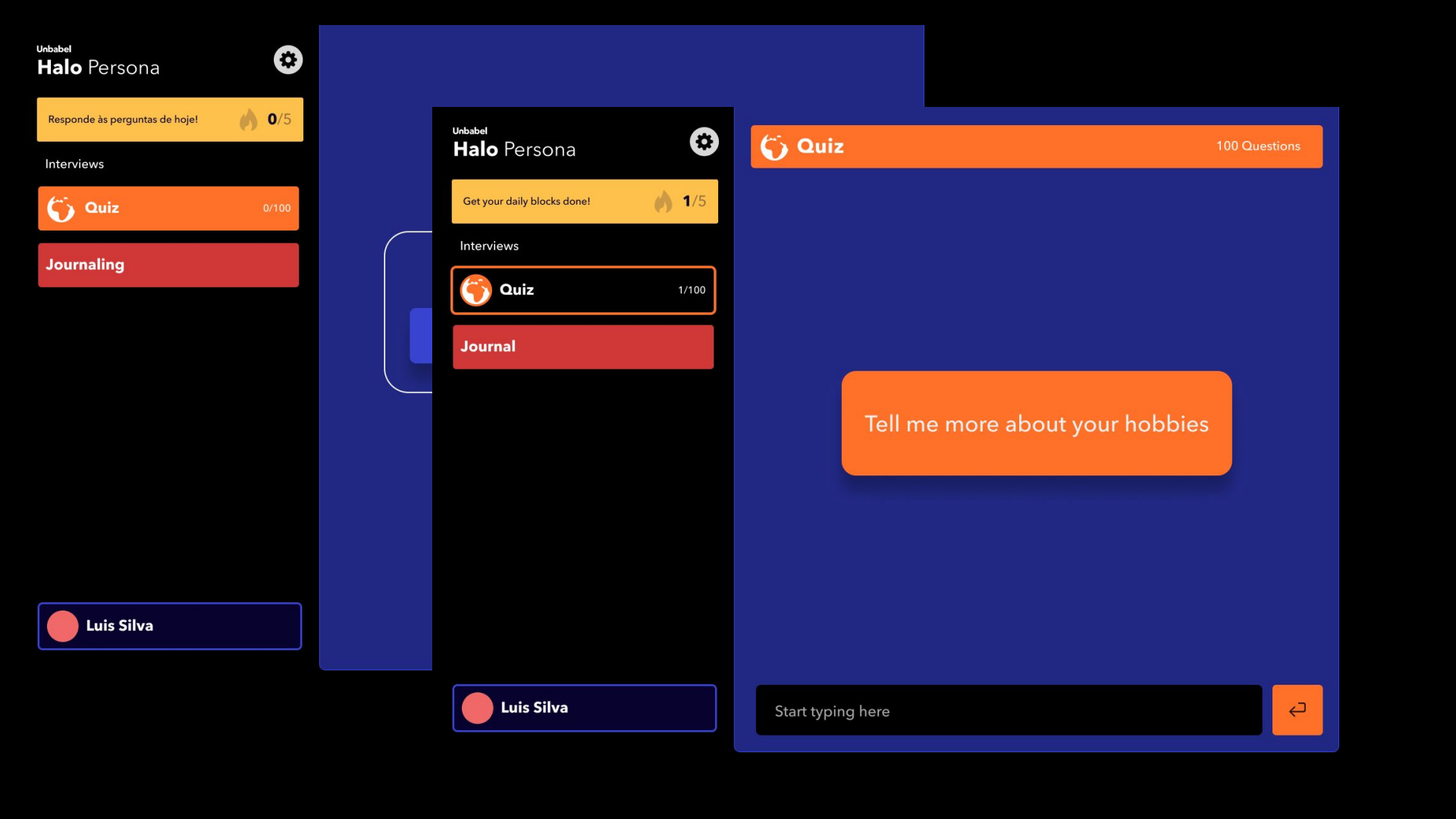
Help gather information about the Patient's routines and habits

SIGN IN

Patient

Create and Edit personal information and change how the Persona behaves

PATIENT SIGN IN


Unbabel
Halo Persona
Responde às perguntas de hoje!
0/5
Interviews
Quiz
0/100
Journaling
Luis Silva
Unbabel
Halo Persona
Get your daily blocks done!
1/5
Interviews
Quiz
1/100
Journal
Luis Silva
Quiz
100 Questions
Tell me more about your hobbies
Start typing here

Unbabel
Halo Persona

Get your daily blocks done! 1/5

Quiz

Quiz 1/100

Journal

Luis Silva

Journal

24/6/2024

Ha dias em que fico com fome

Ontem fui a carcavelos

gosto de bacalhau a gomes de sá

Start typing here

Halo in the news

Halo at Web Summit

8000+ people watching

Assistive intelligence

Voice commander

LISBON

AI can bring back a person's own voice

PEDRO, A FORMER IT security specialist, was forced to quit his job in 2021 when his motor-neurone disease (MND), a neurodegenerative condition, worsened. He can no longer get around without the assistance of his wife or carer and is largely non-verbal.

But when Pedro speaks, his lightly accented English flows with ease. His

Press and media

"ALS took away Luis ability to speak, but not his voice, thanks to AI. Connecting with him was moving, it was inspiring and that's what AI for Good is all about. "

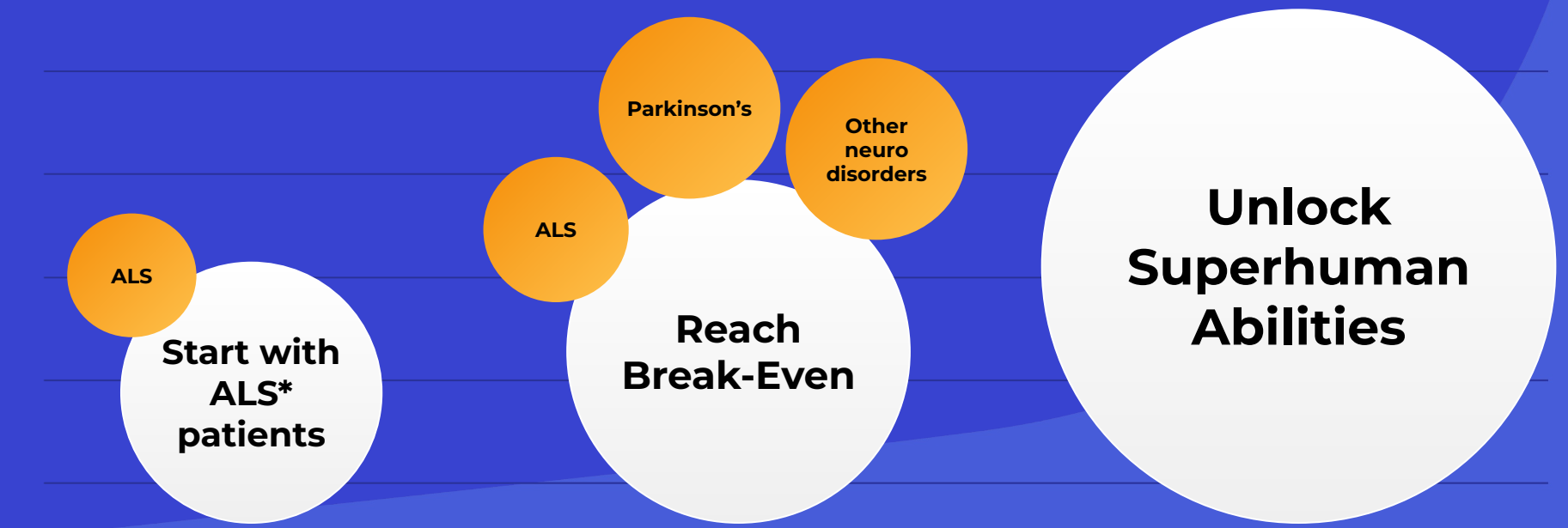
Doreen Bogdan-Martin
Director of the International Telecommunication Union

"It's a long way from perfect. But even in its prototypical state, it is an astonishing thing to witness. I felt lucky to speak to Pedro, and I'm hopeful that many others will follow."

Alex Hern
from The Economist

Expand beyond ALS

The Halo Master Plan



YEAR 1
Build the foundation

YEARS 2-3
Expand to other neuro disorders

YEARS 3+
Break into general usage

* Amyotrophic Lateral Sclerosis

Business Model

(very much WIP)

Neuro Disorders Market Size (EU+US)

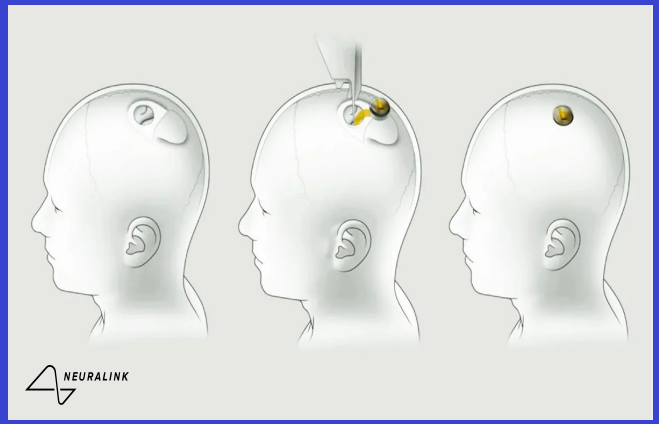
ALS	Parkinson's	Other disorders
70K USERS	**330K** USERS	**>2M** USERS
€84M	**€400M**	**>€2B**

€100/month subscription

Includes advances in neural interface hardware and AI (eg: voice cloning)

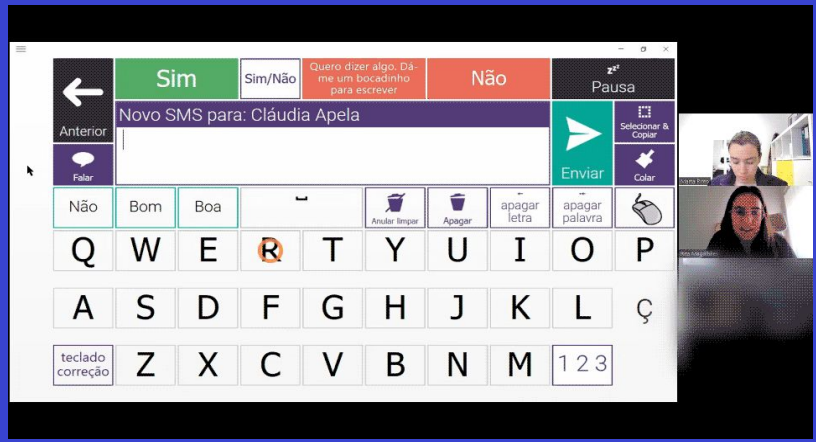
Competition

Invasive Neural Interfaces



Halo is non-invasive, not requiring a surgery.

Eye Tracking



Halo is faster, can be used everywhere, and is calibration free.

It is time for your contribution :)

In 3-4 groups, let’s think about the following challenges

Scaling strategy: Given Halo’s focus on ALS patients and later expansion into other markets, what should be the strategy to scale internationally? Consider factors like regulatory approvals, partnerships, and distribution channels.

Business model optimization: Should Halo stick to a subscription model, or are there alternative revenue streams that could be more sustainable? How could freemium or tiered pricing work for different user groups?

Hardware-software integration: As Halo evolves with non-invasive neural interfaces and wearable devices, how should the business model adapt? Should hardware be sold separately, bundled with a subscription, or provided via a leasing model?

Market expansion & positioning: Beyond ALS, how can Halo effectively position itself for other neurological disorders and eventually consumer applications? What partnerships or marketing strategies would accelerate adoption?