caire

Democratizing Efficient Health Monitoring
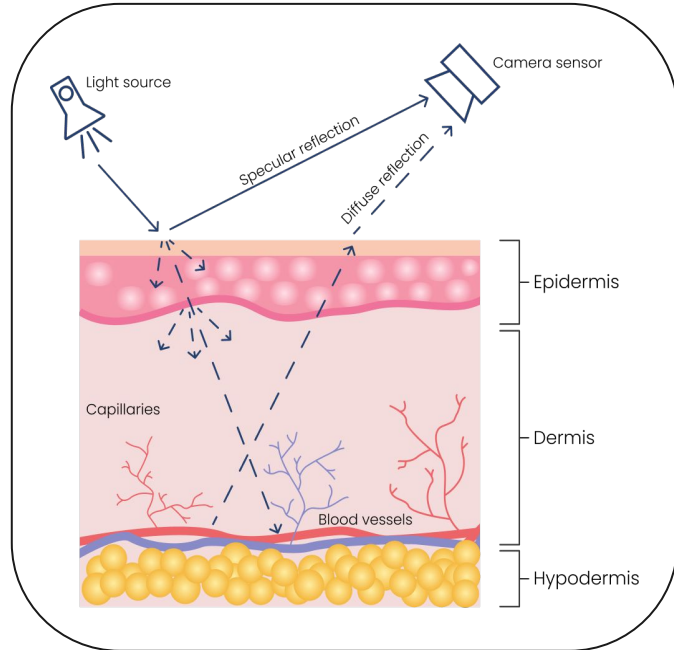
Face color change amplification with AI

r-PPG technology simply explained

Light source

Camera sensor

Specular reflection

Diffuse reflection

Epidermis

Capillaries

Dermis

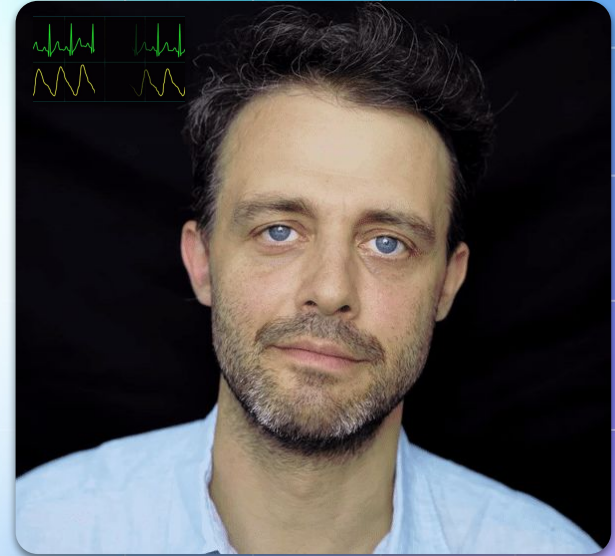Blood vessels

Hypodermis

Heart Rate

Blood Pressure

Oxygen Saturation

Respiration Rate
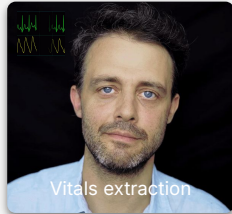

Face seen by the AI after color change amplification

What's Next?
The future of health monitoring powered by Caire

Today

Vital signs Extraction and monitoring
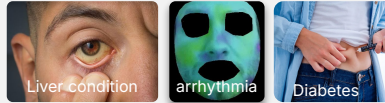

Vitals extraction

- Faster Vitals Extraction
- Available anywhere
- Accessible to anybody
- Digitally connected to E-health

→ Reduces over 10min per person during triage at emergency
→ Increases access to

In 2 Years

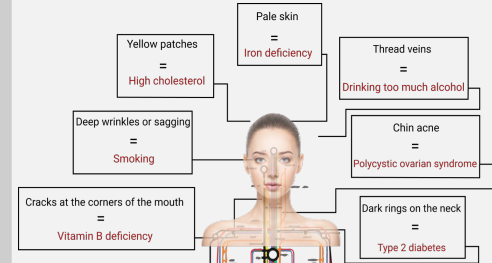**Diagnostic and screening**

Next supported features in pipeline

Liver condition

arrhythmia

Diabetes

Brain stroke risk: Caire current study at Klinikum rechts der Isar

Blood flow

Pr. Dr. Bernhard Hemmer
Director of the Neurology Department at MRI & Dean of TUM School of Medicine
MRI

- 9.3% of world population are diabetes patients
- 0.51% of world population suffer Afib (Cardiovascular diseases are the leading cause of death worldwide)
- 15 million stroke case worldwide every year (Fifth leading cause of death worldwide)

In 4 to 6 Years

Early detection and preventive healthcare

Yellow patches = High cholesterol

Pale skin = Iron deficiency

Thread veins = Drinking too much alcohol

Deep wrinkles or sagging = Smoking

Chin acne = Polycystic ovarian syndrome

Cracks at the corners of the mouth = Vitamin B deficiency

Dark rings on the neck = Type 2 diabetes

Caire Face Map
Facial symptoms and their related conditions

Caire profiled over 100 medical condition that could manifest a facial symptom

General Problem
Challenges of remote health monitoring

Blood Oximeter
*Needs an expert for interpretation.
Not convenient for continuous monitoring.
Takes around 1 minutes
20-30 euros*

Cuffed Blood Pressure
*Needs a professional to use and interpret results
No support for continuous monitoring.
Takes around 2 minutes
20-40 euros*

Health tracker
*Supports continuous monitoring.
Does not necessarily have all features.
100-300 euros*

Hands–off experience with self operating mode is not possible with existent devices
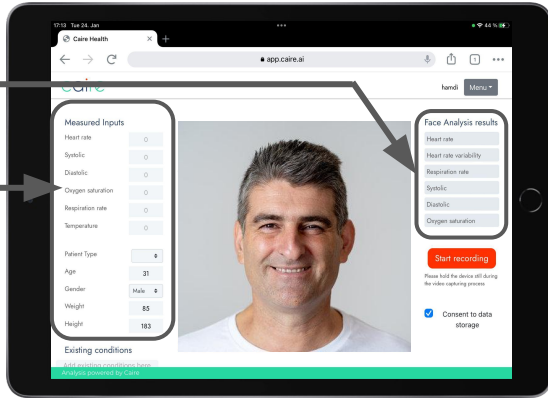
Reliability and Accuracy
A medical grade solution

Caire Predictions

Study Nurse Input from conventional measurement tools

Clinical validation that expands to 5 hospitals from 2 different continents

Building Trust Through Clinical Validation: Live Statistiques and Performance Report
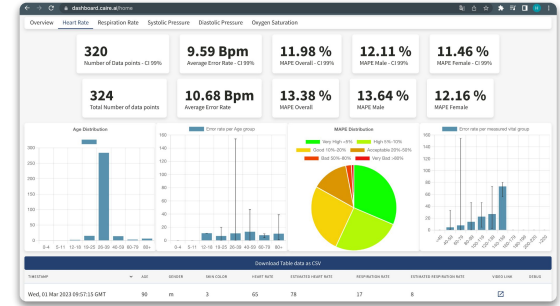
Increasing IP Footprint Through Data Ownership: Clinically Labeled Data for AI model training

3028
Total Number of data points

Clinical trials for the CE certification. Scientific valorization through research papers.

Saving 80% of vital signs measurement time

START OF TRIAGE

END OF TRIAGE

Current Workflow:

Attaching multiple devices

Waiting for measurements

Manual Documentation

Device Removal and Disinfection

2.5 min

CAIRE Workflow:

Video based measurement with direct upload to HMS
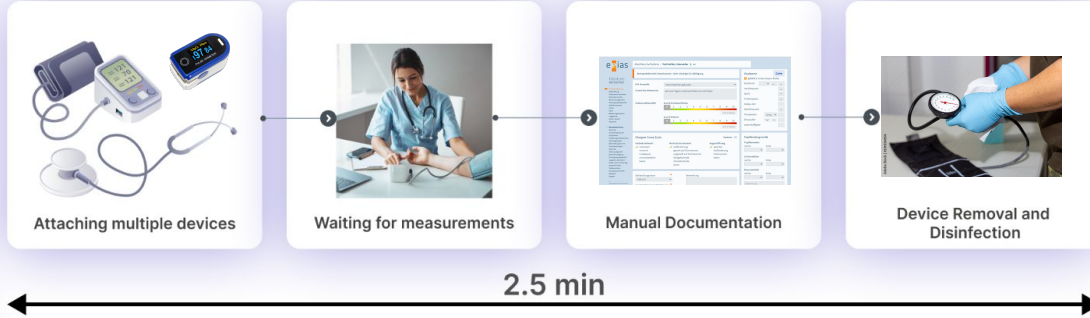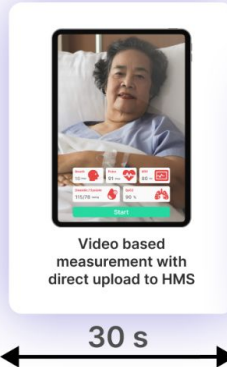
Caire's AI extracts vital signs completely contactless from the video of a patient's face and sends the results to the patient data management system. This turns any smartphone, tablet or webcam in a clinic into a mobile vital signs station.

30 s

Saving 4k work hours for Fürth emergency department

Regular Workflow

Vital Signs Check Costs

€138K

Time Spent on Vital Signs Check

5475 hours/y

Using Caire Technology

-40% In Cost

Total Costs

€83 K

-80% Time

Total Hours Spent

1095 hours/y

Caire In Cars
When Driving Becomes Healthy

It's **More** than a **Car**

Enabling Caire
A car that caires!

Driver Monitoring Solution Suite
AFC & APM

74 bpm

Full Video Here

AFC - Ace Fitness Check:
Ensures the driver is in optimal condition before starting the journey

APM - Ace Performance Monitoring:
Continuously monitors the driver's health throughout the journey to prevent any health episodes.

Passenger Monitoring Solutions
WSR

caire

114 bpm
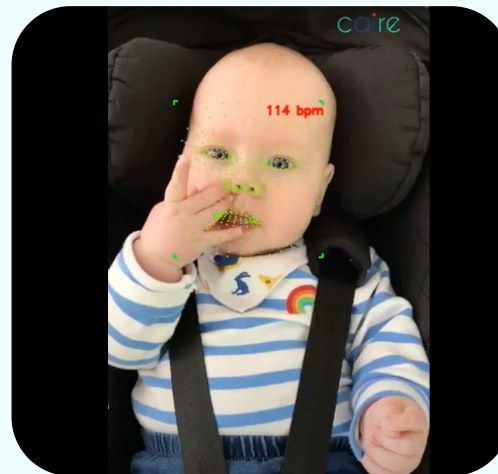
Full Video Here

WSR - Wingman State Reporter
Continuous passenger monitoring throughout the driving journey

Timeline

2024		2025												
Nov	Dec	Jan	Feb	Mar	Apr	Mai	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

14 Months Outlook

Product Development

Heart Rate (HR)

Respiration Rate (RR)

Blood Pressure (BP)

Oxygen Blood Saturation (SpO2)

Software Testing & Documentation

Data Acquisition

Product Freeze

Medical Certification

Quality Management System

Technical Documentation (TD)

Notified Body Auditing | C E

Clinical Trials

Commercialization

Integration into HMS

Contract negotiations

Sales Start

Milestones

Complementary team

Daniel Angloher
Chief AI Officer

- Over 5 years of experience in building AI products.
- Master's in Robotics from TUM, Germany

Hamdi Belhassen
Chief Executive Officer

- 10 years of experience with direct impact in growing 2 startups from scratch
- Master's in Computer Vision from ENSI, Tunisia

Mohtadi Ben Fraj
Chief Technology Officer

- Over 5 years of experience in building internet ~~startups~~ ... ~~Computer~~ Science from C... ~~USA~~

Dr. Houda Daaloul
Chief Medical Officer

- 7 years experience in medical research and ~~pr~~oduct validation
- P~~hD~~ in Chronobiology from ~~U~~Caen, France

Oussama Tekaya
Chief Data Officer

- 13 years in product design and office management for an AI company
- Bachelor in Business & Product Design from College Lasalle, Tunisia

3 more to Come!

40 Years of Combined ~~Experience Building AI Products~~ in a Startup Environment

BIONTECH
InstaDeep™
BurdaForward — Das sind gute Nachrichten
PreciTaste
SONY
TUM
Colorado State University
West Texas A&M University
INSAT 1996
ENSI

Support network and advisors

Prof. Dr. Harald Dormann

Director of the Emergency Department at Klinikum Fürth

- Pilot testing of Caire technology in the ED
- Understanding the needs of the requirements for the integration in the hospital

Andreas Heine

Startups Advisor at Technische Universität München TUM & Ex McKinsey

- Introductions to hospitals and hospital management systems
- Accessing new markets

CAMPUS FOUNDERS

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UNTER NEHMER TUM

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