KAISENSE

Train like an Olympian

Fits in your pocket.
Costs less than a smartwatch.
Smarter than your coach.



Problem Statement

- **41% of people have injured themselves during training**
- **You need feedback from a coach to spot your own mistakes & fix them**
- **Personal training is expensive $65/hr › $780/month training 3x a week**



Current Solutions

Great answers, bad questions

Your heart rate reached 172 bpm!

- *Why did I feel like I was dying?*

Your running pace was 4 minutes per kilometer!

- *Could have figured it out with a stopwatch..*

Great sparring session! You threw 137 punches!

- *Why does my nose hurt?*



Very Complex Problem

Answers to *what - easy*, answers to *why - hard*

To answer the *why* questions you need:

- 360 view of the human body in action
  - **Only *recently became possible* to do this without cameras**

- Knowing what is correct and incorrect
  - **By itself, *data is useless***

Use Science to Fight Better

Could not find a solution on the market.
Decided to make one myself.

7 years of Muay Thai, 15 years of weightlifting

- Perspective on what is correct and incorrect
- I am the target customer

Computer & Electrical Engineering Degree

- Hand built first prototypes while training in Thailand

7 years at Intel & Argonne National Labs

- Solving the most complex science & computational challenges
- Always up-to-date on latest research developments

Solution

Advanced sensors + sleek design + AI

- Body worn sensors collecting data
- AI driving infinite insights

- No cameras needed
- No need for a laboratory
- AI Coach is an expert in your sport
- Costs less than a month of personal training



Hardware

One device for different sports, powerful yet flexibly customizable.



- **Measurement frequency: 10k times/second**
  - Inertial Measurement Unit
  - Accelerometer, Gyroscope, Magnetometer
- **Measures tiny electrical signals from your muscles**
  - Biopotential sensor
  - Heart rate
  - Muscle activation

patent pending

- **Vibrates to notify you of mistakes**
  - Haptics module
- **Communicates with other devices**
  - Processor & Communication module
  - Bluetooth Low Energy
- **Enough juice to last an entire training session**
  - Quickly recharges in the case
- **Super quick and easy to put on and recharge**
  - Magnetics for charging, mounting, IO

patent pending

Software

- **Artificial Intelligence**
  - Recreates your body in 3D space
  - Acts as a coach

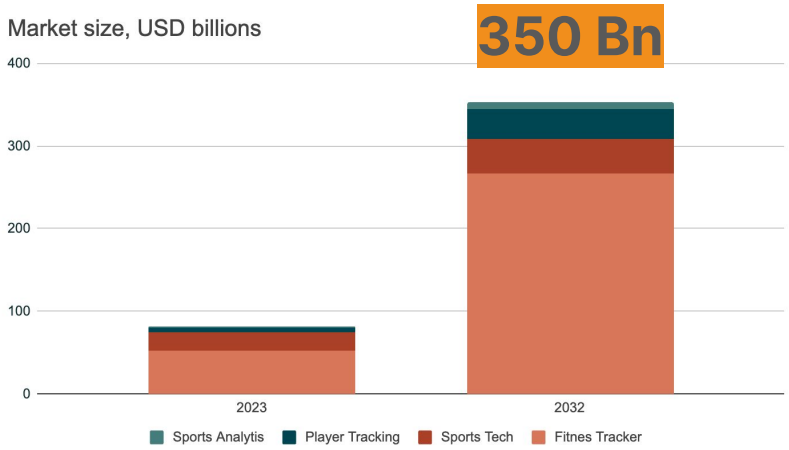
- **Mobile Application**
  - Connects with sensors
  - Records your workouts
  - Shares data with coaches, friends




Large Market Growing Fast
Open for Disruption for Our Next-Gen Technology

Potential Market

Our target market is competitive and serious recreational athletes, sports teams, and institutions eager to adopt advanced technology for performance enhancement and injury prevention in technique-intensive sports.



1% > 1Bn (our market)

The average American spends $100k on sports in their lifetime

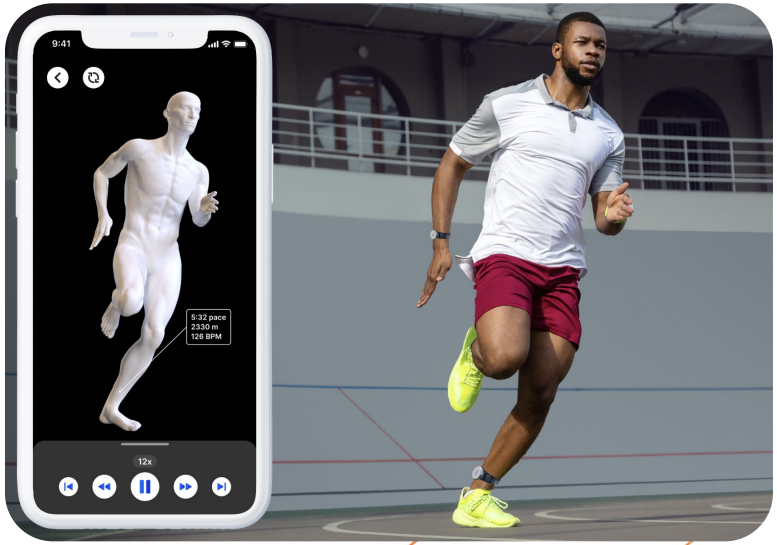
https://barbend.com/fitness-spending-survey/

Initial Target Customer

- Lives in United States
- Trains regularly
  - Combat Sports
  - Weightlifting
  - Running
- Trains ***at least*** 3 times per week

33 million Americans

Target: 1% = 330,000



https://www.bls.gov/spotlight/2017/sports-and-exercise/home.htm

Hardware Pricing

- Base KaiSense kit **retail $300 › profit $60**
  - 6x KaiTag
  - 1x Charging Case
  - 6x base straps

- KaiSense Pulse Strap Kit **retail $100 › profit $50**
  - 6x electrode straps
    - ECG, EEG, Muscle Activation

- Accessories
  - Carrying case **retail $50 › profit $40**
  - Shoe clips **retail $50 › profit $40**

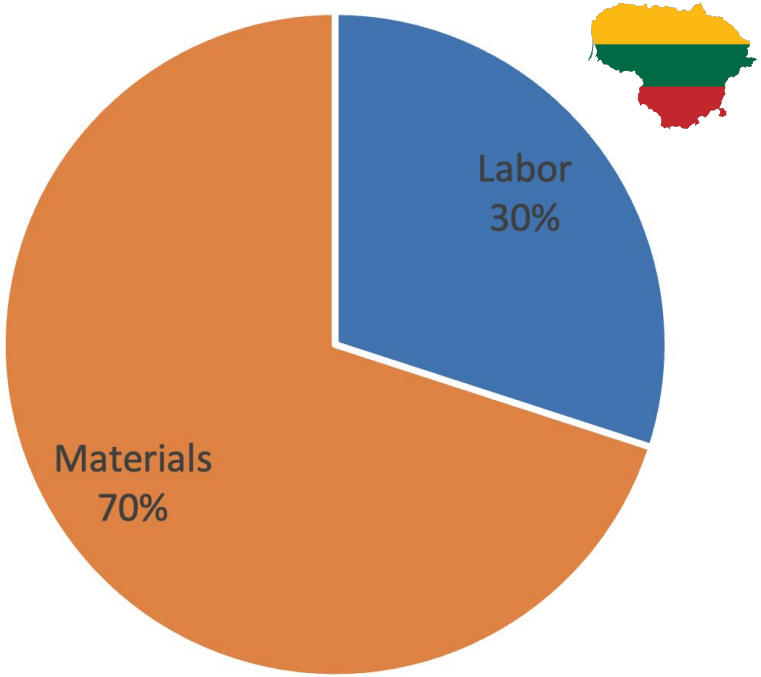


Hardware COGS

- PCB production in Asia
- PCB Assembly in Lithuania (ESEMDA)
- Plastics Production in Lithuania (PLASTICMASTER)
- Final Product Assembly in Lithuania (ENTECH)

KaiSense Base Kit COGS: $240
Profit: $60
Margin: 20%

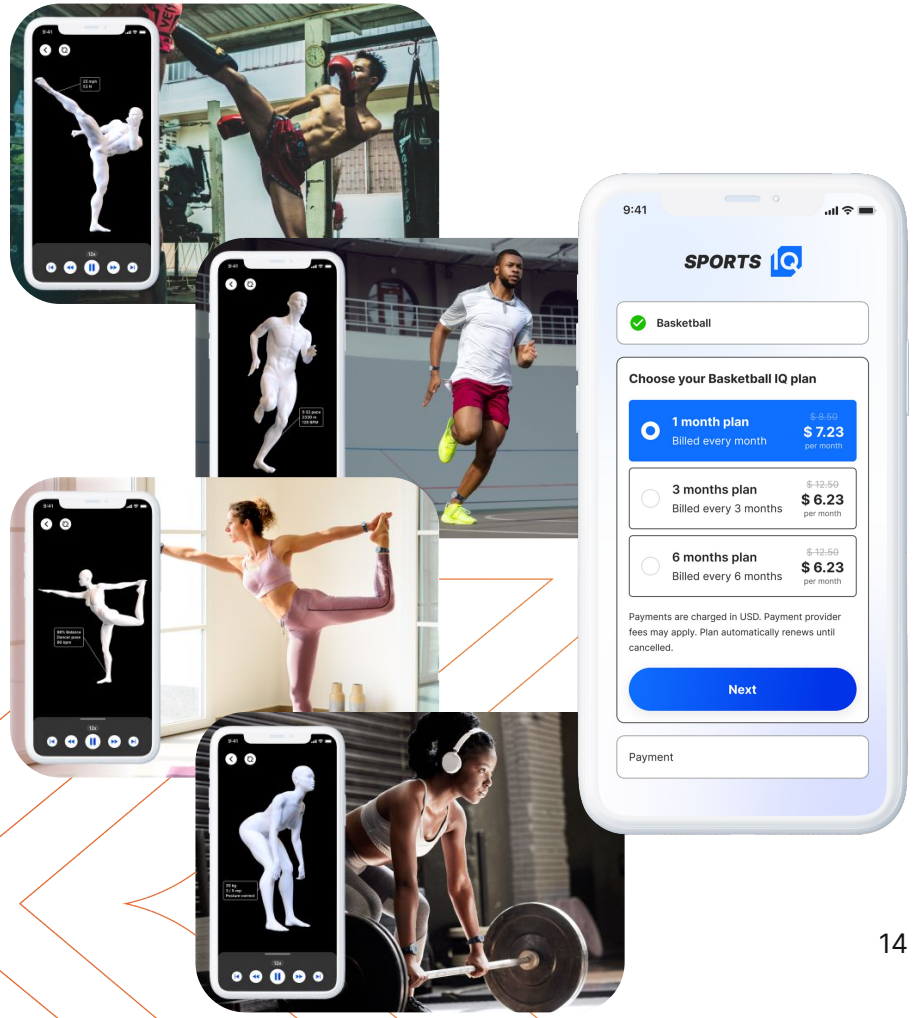
Margin to increase with volume



Software Pricing

Sport subscription - Enable AI Features
3D View
AI Coach
Monthly cost ~ 10% of avg. monthly sport expenditure
Combat sports $15 per month
Bundle Pricing + Cross selling
Discounts for 2nd and 3rd sport
In-app recommendations

Monthly revenue per user: $20

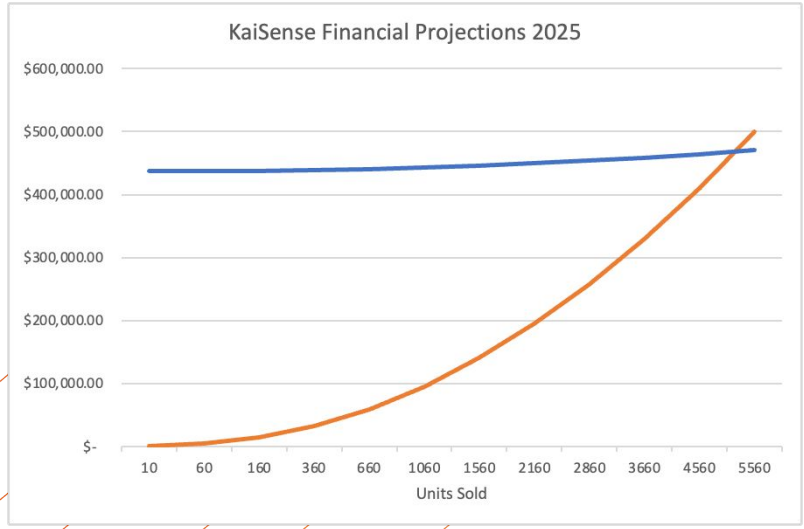


Road to Profitability

Targeting Combat Sports
People training more than 3x/week

Assumptions:
$15 monthly subscription
50% Conversion rate to paid users
$6 Annual Variable Costs per user

Break Even by the end of 2025



Future Markets

Health & Medicine
- Physical therapy
  - Range of motion measurement
  - Guided exercises
- Eldercare
  - Fall & slip detection
  - Medicine regimen compliance & reminders

Construction & Manufacturing
- Worker safety monitoring

Defense
- Detect incapacitation
- Training regiment optimization



Go to Market Strategy

Direct Sales & Marketing

Sales

- Direct-to-customer via www.kaisense.com
- KaiSense-enabled gyms

Marketing

- Social media & targeted ads
- Presence at competitions
- Social proof partner with a known athlete





Competitive Analysis

No real direct competition

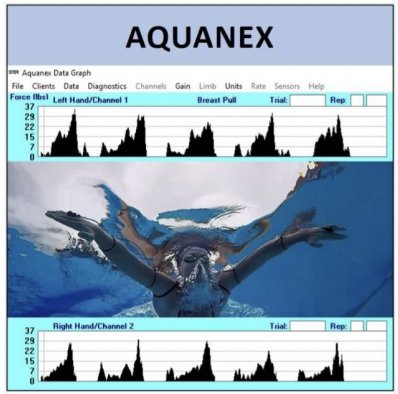
Smartwatches

- Only offer activity tracking
- Nothing to do with technique or improving
- Only records the movement of one body part
- Sports as an afterthought



Sport-Specific Solutions

- Expensive
- Limited features
- Unavailable for many sports



Aquanex Underwater Video and Force Analysis System
$3,370.00

$3,370.00

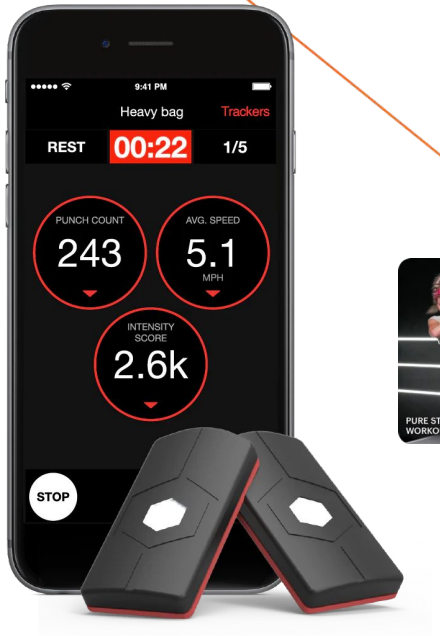


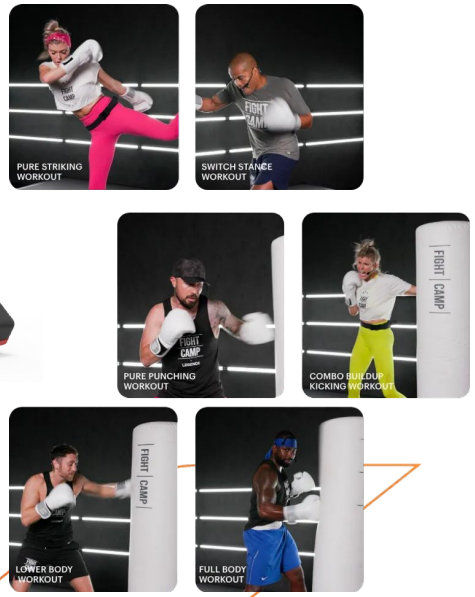
Motion Capture

- Only captures motion
- No understanding of sports
- Can only be used in a laboratory
- Very expensive



Competitor Highlight: Fightcamp (Hykso)





- Started off as boxing trackers
- Turned into Peloton for kickboxing
  - Kickboxing as cardio
  - At-home workouts

Another product that answers ***the what*** and not ***the why***

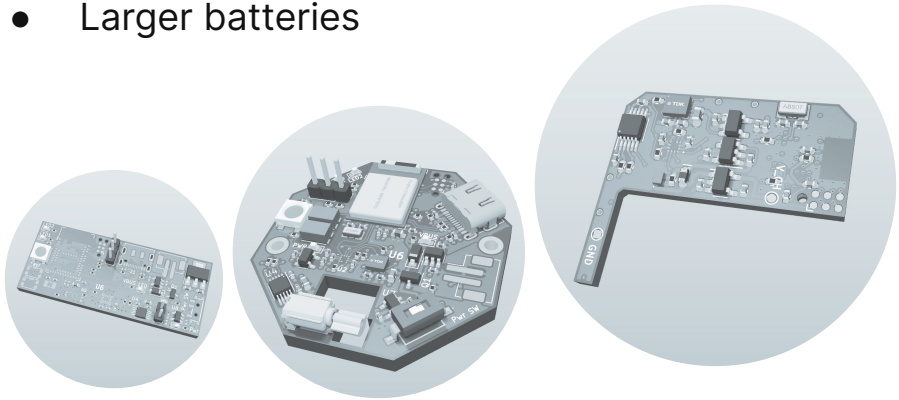
Raised $100 million

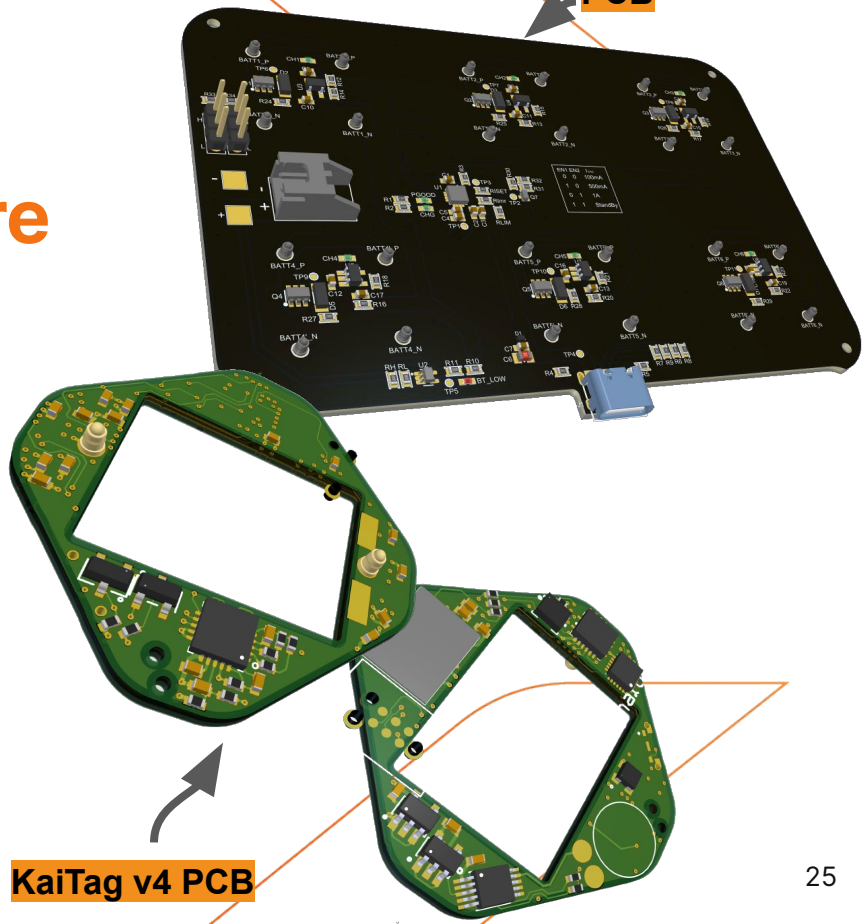

Traction

Four Iterations of Hardware Designs & Prototypes

Iteratively improve each design

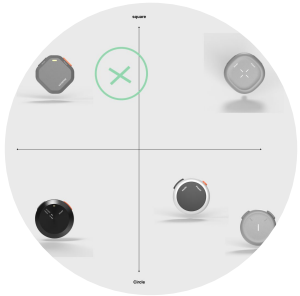
- More sensors
- Smaller footprint
- Larger batteries

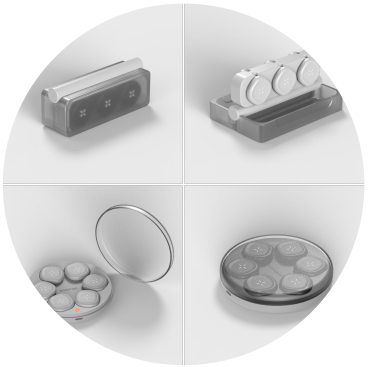




Four Iterations of Industrial Designs

-











AI-Powered Motion Capture

- Starting from open-source projects
- Developing our own sports datasets
- Advancing Research

Come see me to try a live demo!



Established manufacturing partnerships

- Made in Lithuania
- In talks with MacroFab for production in the USA as an alternative

Design of CAD assemblies in progress
inventory by the end of 2024

Intellectual property

Trademark Filings

- Intent to use KaiSense
- Intent to use KaiTag
- kaisense.com

Patents Granted

- Use of 3D motion capture renderings in sports training

Patents Pending

- Haptics as sports technique feedback mechanism
- Magnetic mounting and IO solution

Draft Applications

- Conductive straps for measuring body signals

Dream Team



Paulius
Velesko
CEO

Intel



Jokūbas
Sabaliauskas
UX/UI



Edvardas
Kunigėnas
R&D

3D Graphics



Paulius
Kazakas
Cloud Infrastructure

Amazon

Kilo.Health

Argyle CTO



Žygis
Jočys
AI/ML

PhD in Human
Motion Analysis



Audrius
Zujus
Advisor



Rokas
Augustinas
React dev

Eneba

Monika
Venčkauskaitė
Advisor

Vinted

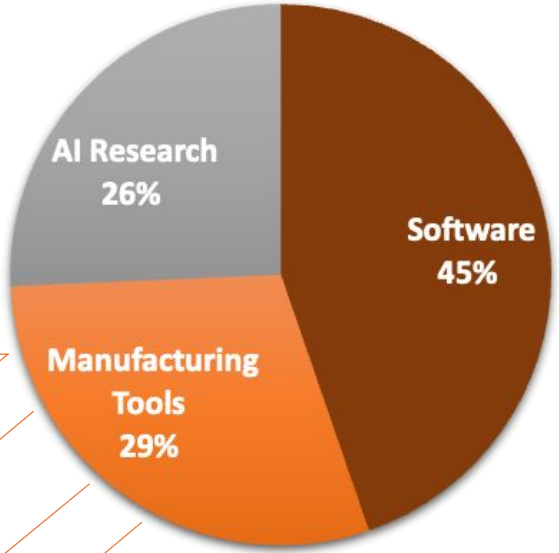
Funding

Raised in Pre-Seed:

- €100k Baltic Sandbox Ventures
- €86k EU Grant for AI Development

Raising Seed Round: €500k to finish development & go to market

- **Led by Baltic Sandbox Ventures**
- **In talks with Coinvest**
    - **Looking for 2 angel investors**



AISENSE

Any Questions?



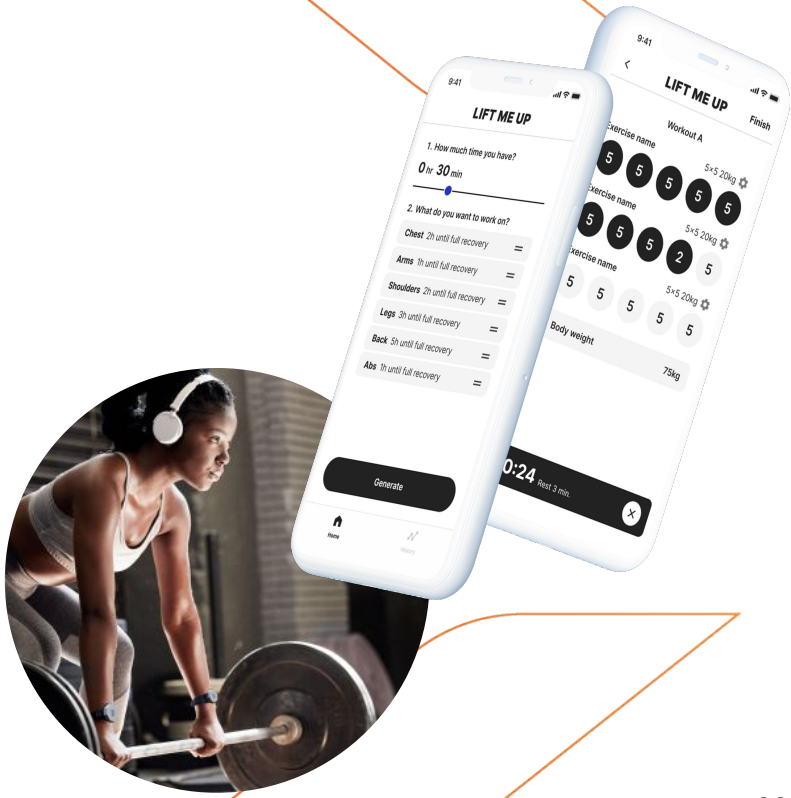
R&D

Active Research

- Weightlifting program generator
- Finger tracking via magnetic fields
- Smart Mouth Guard

Planned R&D

- EEG Muscle Activation Measurement



KaiCoach - Smart Gym Package



A set of KaiSense kits to be loaned/rented at a gym plus additional software to integrate them all. Coach app + TV application

- Coach can monitor individuals at the gym
- Coach can see workouts done outside of the gym
- Display statistics on a TV during class