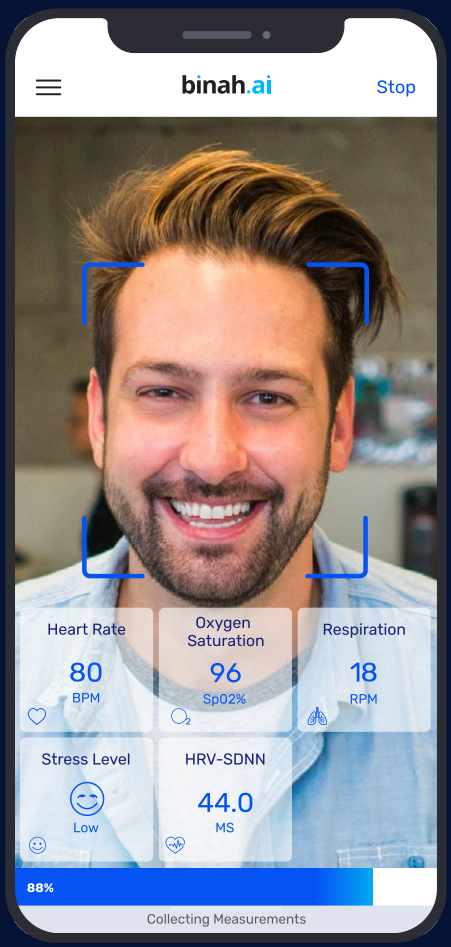
binah.ai
AI YOUR FUTURE TODAY

Supporting Business Continuity During The COVID-19 Pandemic And Beyond - With Real-Time, Remote Health Monitoring



Industries on the verge of collapse

Perhaps the primary side-effect of the current COVID-19 crisis is the economic burden it is imposing on businesses. Millions of people around the world are forced to stay at home as businesses cease to function – either partially or entirely. While some employees may be able to work from home, others cannot enjoy this privilege. Many industries – such as tourism, airline transportation, shared riding, restaurants, and other sectors that require human interaction – are on the brink of collapse, with huge economic and human costs. Clearly, creative measures will have to be taken in order to allow people to go back to work and to restore the economy.

Going back to work

It is widely understood that the current business shutdown cannot last much longer – the re-opening of the economy surely cannot wait for a COVID-19 vaccine, which may take another year – so governments and businesses are trying to introduce solutions that will allow people to continue working and keep the economy running. Some sectors, defined as "critical", such as food manufacturing, energy supply, emergency services or law enforcement, simply have to keep functioning, with extensive efforts being made to protect their teams from the COVID-19 and maintain business continuity. In Germany, measures applied during the 2008 economic crisis – like working in shifts and a shortened work week – are now back in use.

Other sectors, that are characterized by close human encounters, such as air and ground transportation, cruises, entertainment, and dining, must be able to guarantee their customers' and employees' health and safety in order to survive.

As the pandemic continues, businesses are making plans and building strategies on how to restore operations, but are still worrying that a hasty return could cause a second, bigger wave of infection. What measures can these businesses take to mitigate a spread of the virus while maintaining business continuity?

Who takes responsibility?

Stopping the spread of COVID-19 has become the responsibility of each and every one of us. People eager to go back to work may choose to do so in spite of not feeling 100% healthy, and therefore, may endanger entire teams and businesses. But what tools do people have at their disposal to determine if they are fit to go to work – or, if their morning cough might be an indicator for COVID-19-related?

Almost everyone has a thermometer at home, but what happens when there are no preliminary symptoms of deterioration? Research has already shown that many COVID-19 bearers do not develop the symptoms commonly associated with the disease, and for many of these bearers, the disease can cause severe deterioration, exposing respiration-related symptoms, such as shortness of breath, low oxygen saturation levels (SpO2), and increased heart rate. On March 13, 2020, the World Health Organization (WHO) released a document called "Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected". The document emphasizes the critical importance of monitoring oxygen saturation (SpO2) when COVID-19 is suspected. Numerous other medical publications show the relationship between low levels of SpO2 and risks of pneumonia. But without the relevant medical equipment, employees and customers will not be able to monitor these vital signs from home.

Businesses must also assume responsibility for employee health. If the virus spreads among the employees, not only does this put business continuity at risk – the business may even be held accountable for the harm caused. So how can these risks be mitigated?

Binah'ai's solution for ensuring business continuity, and more

Binah.ai's technology helps mitigate business risk with its ability to monitor – remotely and in real-time – vital signs such as heart rate, SpO2, respiration rate and mental stress – just out of employee smartphone. Using video data obtained from the upper cheek area of the user's face, or by placing a finger on the back camera Binah.ai's app applies a novel technology mix of signal processing and artificial intelligence, combined with proprietary mathematical algorithms, to extract these vital signs in less than 2 minutes, with medical-grade accuracy.

Delivered as an SDK or as an end-to-end white label platform, the technology can be easily integrated into a businesses' own app, or swiftly developed into a customized app of their own. By putting this easy-to-use tool in their employees' hands, businesses can prompt their teams to run a daily check prior to coming into the office and to complete a daily health profile. Providing trend data and a history of measurements over the last 7, 14 or 21 days – it can offer predictive insight regarding diseases that may develop into severe cases. People who are feeling "generally well" can better understand their state of health and make more educated decisions.

When it comes to air travel, and other transportation services, customers will be able to undergo screening before checking in for a flight, or before an Uber ride. Restaurants will be able to safely serve customers that performed a quick check-up before entering the premises, and theaters will be able to allow gatherings (with the required 3-seat distance) to see a show.

Using Binah.ai's technology, businesses can dramatically reduce the exposure of their employees and/or customers to contagious diseases

Health Monitoring - Beyond the Crisis

The use of Binah.ai's app can also have very positive side-effects, such as prompting people to achieve and maintain better levels of wellness and to lead healthier lifestyles. The app will soon introduce blood pressure and hemoglobin measurements, providing benefits that will continue to enhance employee well-being, long after the COVID-19 is forgotten.

History has shown that epidemics come and go, therefore, preparations for future crises are of critical importance. There is no doubt that after this crisis, people should take general health and immunity levels more seriously and attempt to lead healthier lives. The high-tech community is responding, with initiatives by Google, Apple, and the World Health Organization that are targeted at the discovery of pandemic epicenters and combating their spread. And Binah.ai is leading the way with a powerful, scalable tool that puts the power of diagnostic, preventive medicine in the hands of the masses.

Benefits

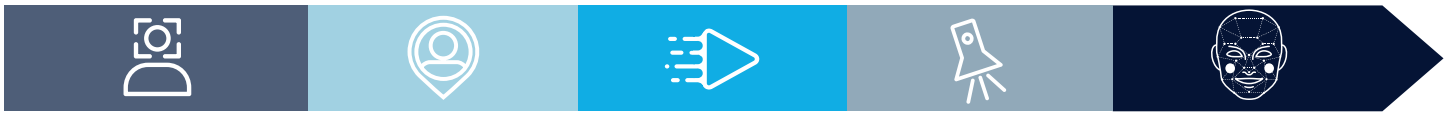
Businesses will greatly benefit from the use of the Binah.ai app, both during the current COVID-19 crisis, and following its resolution:

- It reduces the risk of losing entire teams and sometimes more due to mass infection.
- When an employee falls ill, co-workers can quarantine themselves at to make sure that they are not infected as well.
- It enables workforce planning and scheduling optimization.
- It enhances customers' trust that they are not at risk when visiting on-premises.
- The app monitors general wellness and health, and can be used before going to work, or anytime they wish.

How It Works

Binah.ai's solution applies a unique mix of signal processing and AI technologies, combined with a proprietary mathematical back-end to analyze a video taken from the upper cheek skin region of the face (no video of the eyes is required). It extracts vital signs within 10 seconds to 2 minutes, with medical-grade accuracy. It applies motion compensation and illumination normalization, and supports any age, gender and skin color. The vital signs extraction is based on a remote photoplethysmography (rPPG) signal using a unique, superior methodology. Binah.ai's stress level measurement is based on Baevsky's and US/European Index level measurements (globally approved). Each use case relies on peer-reviewed medical research, and is based on the ability to retrieve continuous, accurate rPPG measurements using video feeds in real time.

Estimation of the heart rate with video consists of the following steps:



Face detection | Face tracking | Motion compensation | Illumination normalization | Skin region of interest selection

Heart Rate | **Heart Rate Variability** | **Mental Stress Level** | **Oxygen Saturation** | **Respiration Rate** | **Blood Pressure***

*Under development

Delivery

Binah.ai's app is available as an SDK or as an end-to-end white label application platform.

Language Support

Currently available in the following languages: English, Arabic, Chinese, French, German, Hebrew, Indonesian, Italian, Japanese, Portuguese, Russian, Spanish. More languages available upon request.

Why Binah.ai?

Accessible
No wearables - available on any popular mobile device such as smartphones and tablets

Accurate
Built and clinically tested to deliver medical-grade accuracy

Easy-to-use
Detects vital signs just by looking at any device's camera

Always Available
App runs locally on device and does not require internet connection

Easy to Integrate
Delivered as an SDK or end-to-end white label app platform

For All
Supports any age, gender and skin color

Recent Market Recognition

CES Innovation Awards 2020 Honoree

Gartner Cool Vendor in AI Core Technologies 2019

GRAND CHAMPION
NTT Data
10th Open Innovation International Contest 2020

DOMAIN CHAMPION
NTT Data
10th Open Innovation International Contest 2020

The GARTNER COOL VENDOR badge is a trademark and service mark of Gartner, Inc., and/or its affiliates, and is used herein with permission. All rights reserved. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

binah.ai
AI YOUR FUTURE TODAY

Headquarters: Israel | **Regional Offices**: United States, United Kingdom, Japan www.binah.ai| info@binah.ai