

AI Screen Station

Taipei Medical University Hospital



Overview

Gorilla Technology deployed an All-in-One AI Screen Station at the Taipei Medical University Hospital to streamline the entry process and ensure the safety and protection of hospital workers during Covid-19. This case review goes over the project and how it performed.



Taipei Medical University Hospital

The hospital is located in central Taipei and houses 800 hospital beds and over 2000 employees.¹ With the recent restrictions for Covid-19 placed on medical facilities, administrators were looking for an expedient way to usher in patients and staff to the building—all the while following the pandemic guidelines and keep everyone safe.

Project Goals

The staff at Taipei Medical University Hospital had some specific targets they wanted to meet:

- 1. Ensure mask-wearing and temperature checks.**
Guidelines required all entrants wear masks and have a normal body temperature.
- 2. Allow access privileges into the building.**
There needed to be a way to allow entry to those following the above guidelines and alerting/warning those who transgressed.
- 3. Limit surface contact by staff and visitors.**
Most entrances typically see people touching doors, electronic scanners, and/or writing information at a check-in desk. There needed to be little physical contact involved when entering.
- 4. Maintain entry/exit records to perform contact tracing.**
Strict logs need to be kept of who came in and out of the hospital in case of a future outbreak occurring.

¹ <https://www.tmu.org.tw/cms/about>

Challenges for Front-line Workers

Taipei Medical University Hospital has hundreds of people coming in and out of its doors every hour, keeping track of which entrants were not following pandemic guidelines was a challenge.

Previously, temperatures and masks were monitored by entrance staff by using either a hand-held thermometers or a thermal camera which required staff to be on site to check the numbers.

Moreover, front-line hospital workers face many infection points as they move around from location to location within the hospital, increasing the risk for spreading infections and underlining the need for constant PPE and temperature monitoring.



Intel-Based Solution

Gorilla provided 3 AI Screen Stations with automated temperature & mask detection to the Taipei Medical University Hospital. Each station contains:

- an Intel CPU
- a RealSense camera
- Gorilla's custom software optimized for the OpenVINO toolkit.
- a thermal sensor

OpenVINO™



Each screen station performed the following functions:

❖ **Performs Temperature and Mask Detection on all visitors and staff**

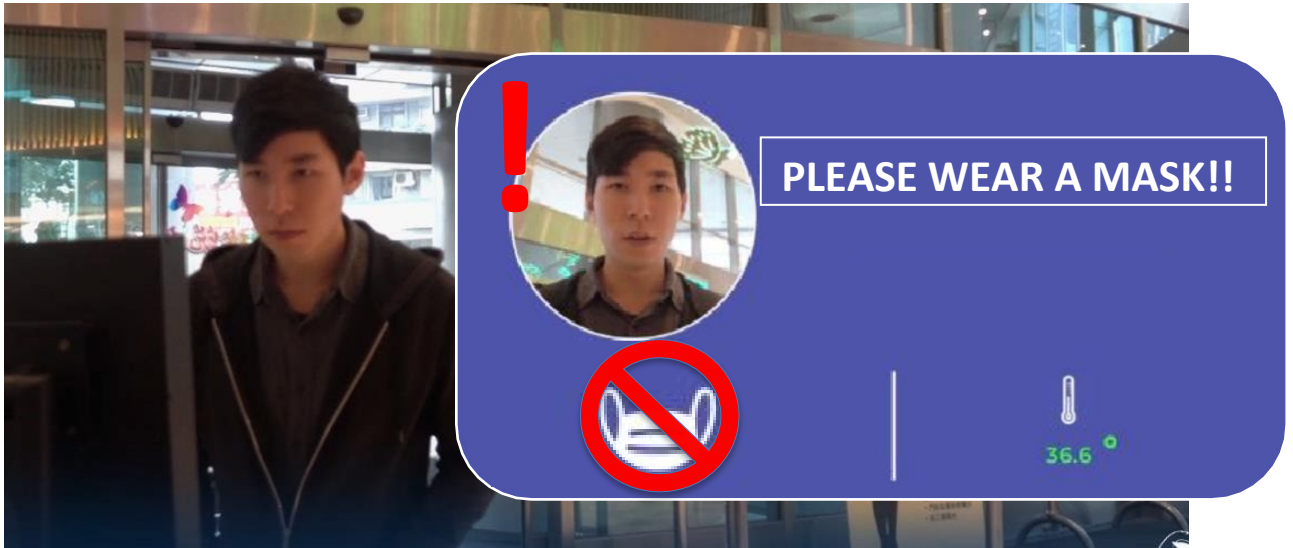
The wall- or desk-mounted system performs face recognition for staff as well as guests and visitors



The AI Screen Station performs facial recognition for staff and checks for mask-wearing and body temperature.

❖ **Allows access based on mask and temperature values**

The solution can be connected to door locks and security systems to lock and unlock based on who's wearing a mask and or their temperature record. If a high-temperature or non-mask wearing is detected, the system sends out an alert to the administrator on duty.



The system can bar entry to those not wearing masks.

❖ **Completely touchless system**

The AI Screen Station doesn't require PIN codes or pass cards and eliminates contact between the entrants and the staff. Processing of each person in 0.5 seconds allowing for socially distanced lineups with no long wait times required.

❖ **All entry and exits are logged**

To comply with local Covid-19 guidelines on contact tracing, every person's entry and exit times are recorded and saved to a central database for any future investigations.

Visitor Profile

IMAGE UPLOAD

* Visitor Name	Jolina
Job Title	Technical Support
* Mobile Phone	0912345678
* Security Code	0912345678
* Email	jolina@gorilla-technology.com
RFID	RFID
Institution Name	Institution Name

SUBMIT

CLOSE

Results & Benefits

The 3 screen stations quickly benefitted the hospital staff and its visitors upon installation:

- 1. Reduce Virus Exposure**

There were no local outbreaks of Covid-19 or seasonal flu within hospital premises.

- 2. Facial recognition for staff while they wear masks**

This allowed for identity verification without the need to keep dangerously removing protective gear. There was a reduction of healthcare workers contracting viruses.

- 3. A decrease in operational costs**

By not having to deploy numerous staff at entry/exit points, the hospital saved on staffing budgets. The HR deployment at the front entrances were cut in half.

- 4. Comprehensive alerting and monitoring system**

On-duty staff were immediately alerted to anyone without a mask or a high temperature for response.

Conclusions

This project shows that edge AI and video analytics solutions can be leveraged to ensure the protection and safety of hospital workers. Since the solution was deployed at the 3 entrances of hospital, staffing requirements were decreased by 50% and the entry/exit monitoring system was streamlined and centralized.

These kinds of solutions can not only reduce the infection rates in medical environments, but they can be a daily benefit to frontline workers and visitors alike.

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