GLORY's Facial Recognition Technology Contributing to a Secure Society

GLORY
Facial
Recognition
Technology

Facial recognition technology verifies people's identities from videos or photos. This convenient, non-contact verification technology is enjoying widespread use in the public and private sectors in Japan.

GLORY's facial recognition technology, which makes use of the company's expertise in areas such as coin and banknote identification and handwriting recognition, offers the industry's highest level of verification accuracy. By verifying a person's face through the scanning of all features across the entire face with equal importance, GLORY's facial recognition technology provides high-performance, consistent reading of an identity with minimal interference from factors such as sunglasses and gauze masks, or low-quality images.

Highly Accurate Recognition

GLORY developed a recognition engine that uses judgment logic to identify what makes each person unique. Based on an "average face," recognition is carried out by using the features of 100 points on the face.

Feature comparison

Average face   Subject
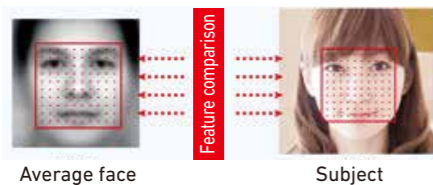
Recognition Even When Face Tilted

The facial recognition engine automatically makes an estimate of the subject's face at any given angle. Based on this, the engine then adjusts how each facial feature will look from various angles. This makes it possible for the engine to recognize a person even if he or she is facing a different direction than in the photograph originally recorded into the system.

Angle estimate
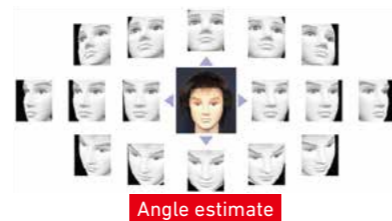
Greater Recognition Accuracy Means Wider Application

In February 2017, GLORY succeeded in developing facial recognition technology with dramatic advances in recognition accuracy. A major advance was made in the recognition accuracy of the face at differing angles. This opened up new areas of use for facial recognition systems in situations where it had previously not been possible (due to, for example, the height of a security camera or the angle at which it was able to record passing subjects).

Ever since the company's first practical application of facial recognition systems in 2003, GLORY products have been used in a growing number of facilities, be it large commercial complexes, apartment buildings, or hospitals. GLORY will strive to provide new solutions using facial recognition technology to its existing customers in industries such as finance and distribution, and it will establish business models that create new value for customers.

Through the growing potential of its facial recognition technology, GLORY will contribute to the realization of a society where people can enjoy life to its fullest in safety and with peace of mind.

The Many Faces of GLORY's Facial Recognition Technology

Case 1 — Comfort and Convenience Through Keyless Living

Facial recognition for keyless entrance to rooms is one way that hotels could offer their guests a comfortable, stress-free stay. Because doors unlock simply by facial recognition, guests can enter and leave without the bother of carrying a key card around with them or the worry of losing it somewhere.

Case 2 — Reducing Disruptions to Business

Bookstores and other retail establishments want to prevent loss and damage to their businesses such as shoplifting and vandalism. With a facial recognition system, shops can pre-register suspicious persons and then be alerted when they enter the shop again.

Case 3 — Providing Information Based on User Attributes

By linking facial recognition technology with digital signage, it's possible to surmise a user's age and gender and then automatically display information suitable to him or her. Offering effective information geared to individual users means greater advertising efficiency.

Case 4 — Greater Security Through Authorized Admission

Installing facial recognition systems in places requiring security measures, such as apartment buildings or office buildings, can automatically open doors for authorized personnel while keeping out all others. Because no IC cards or PIN codes are needed, users enjoy convenience and greater security.

Case 5 — Customized Services

GLORY's facial recognition technology is used in the Biz Pack service of Pepper for Biz, a model of the Pepper humanoid robot geared to commercial customers. Pepper uses facial recognition to estimate things like the gender and age of customers who enter a store. This allows stores to offer services geared to each customer's particular needs.

Case 6 — Keeping Children Safe and Easing the Burden on Daycare Staff

Facial recognition technology holds promise for daycare centers. Cameras installed in the parking lot and entrance area identify approaching visitors and provide this information to staff inside the daycare via screens and voice announcements. At the same time, authorized daycare center users are automatically let inside. This means daycare staff can handle visitors while continuing to keep an eye on the children.

Prevention System for Non-Authorized Patients Leaving Hospitals

With the elderly making up an increasing number of in-patients at healthcare institutions in Japan, there are more and more cases of patients with dementia wandering off from the facilities and getting into accidents.
By installing GLORY's facial-recognition-driven Prevention System, hospitals can prevent such patients from leaving the premises and keep them safe.
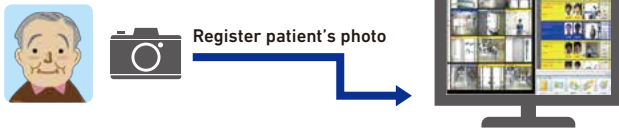
GLORY's Prevention System

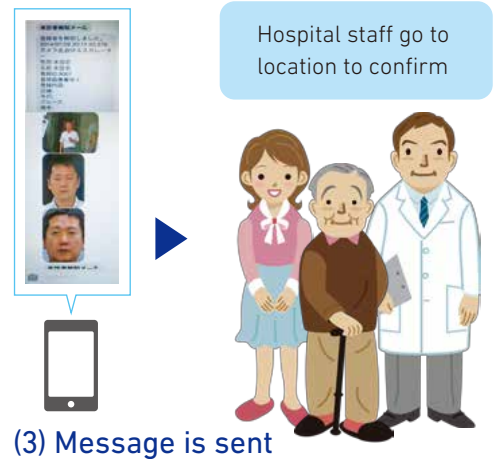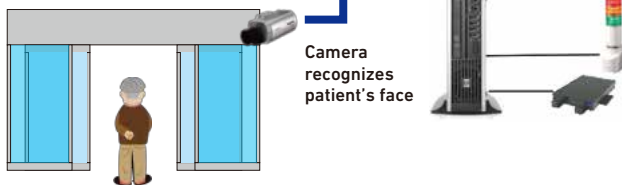**System uses facial recognition to prevent patients from leaving the hospital**

(1) The photos of in-patients who require watching are recorded in the system.
(2) The system detects whenever these patients attempt to leave the hospital.
(3) Photographs and patient information are automatically sent to the PC or tablet of hospital staff.

(1) Patient is registered

The patient's photo is registered in the system after the patient and his/her family give the hospital permission to do so.

Register patient's photo

(2) Patient is detected

Camera recognizes patient's face

Alert activated

Hospital staff go to location to confirm

(3) Message is sent

Customer Case Study: Hakui General Hospital

Background	Solution	Main Benefits
The hospital had cases in which in-patients suffering from problems such as dementia left the premises without permission, leading to injuries to the patient and more hours needed by hospital staff to bring them to safety. A way to ensure patient safety was urgently needed.	A total of 12 cameras, which operate around the clock, were installed at four locations, including at the main entrance and the after-hours entrance. Thanks to the installation of the Prevention System, hospital staff are alerted and can take immediate action when a patient attempts to leave the premises without permission.	Because patients are prevented from leaving without permission, both patients and their families feel more at ease and the hospital enjoys greater customer satisfaction. In addition, hospital staff require less time to confirm the movement of or search for patients of interest, which eases the burden on staff and improves hospital work efficiency.

Voice

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Our hospital has many elderly in-patients living in the region, and we have for some time now had a project team that oversees a range of care services for them. Part of this care is the installation of the Prevention System using facial recognition technology. We had previously used conventional security cameras, but if the hospital staff watching the camera monitors didn't personally know the patients, they couldn't respond to certain situations as required. But with facial recognition, we don't need to be constantly watching the camera monitors. Since alerts are sent automatically, any of our staff—even those who don't know the patients—can get to the scene promptly and take appropriate action.

In the two years since we began using it, no patients registered in the system have gone missing. Our aim is to keep the number of accidents due to missing in-patients at zero so that they can enjoy a safe, peaceful hospital stay. I believe that if this Prevention System is used at healthcare institutions all over the country, elderly in-patients and their families, as well as local residents, can enjoy peace of mind and put their trust in hospitals.