

Security - Stratosphere sees face recognition reduce losses by 90 percent

Sept. 2, 2005

Face-recognition software is the latest and greatest weapon in the war against the cheats. But how does it work and exactly how will it cut down losses? An insight to the system being used at The Stratosphere in Las Vegas explains all.

Face-recognition aimed to revolutionise casino surveillance when it was introduced a few years ago, with software to translate the characteristics of the face into a unique set of numbers called the eigenface.

Using either a photo or a grab from live video, the software calculates 128 different measurements of the face, from hairline to chin and ear-to-ear. The result of the calculations is a unique identifier for the mapped face at that point in time, which is compared with other faces in one or more databases, and probable matches are identified accompanied by physical characteristics, aliases, and other helpful information. The clearer the picture, the quicker the matches are delivered, although the final decision should always be made by a human, not the computer.

The Stratosphere took all this advice on board when it first sat down to talks with Biometrica Systems, now owned by Viisage Technology, which provides face-recognition software and extensive databases to more than 175 casinos.

Jim Pepin, vice president of sales and marketing for Biometrica Systems, said: "The Stratosphere was one of the very first casinos to start using the system when Biometrica started out, and now about seven years later we have grown to have our software in about 175 casinos worldwide, which makes it the new industry standard in casino identification technology.

"The Stratosphere has always been one of the most progressive and leading operations in casino surveillance and knew that the Biometrica system was valuable," he added. "Their experience shows that it pays for itself literally fifty times over each and every year."

During an average day, the Stratosphere Hotel and Casino has thousands of patrons visit its casino floor, and even more on a busy night. While the traffic in the casino is great for business, monitoring the crowd for advantage players, cheats, and undesirables can be a daunting job.

And the cost of not finding these individuals is unacceptable, given the estimate that half a million dollars of casino revenue is lost to cheats annually.

Recognising the severity of this problem, Stratosphere management decided to take action and prevent further revenue loss. In order to make this goal a reality, the Stratosphere surveillance team would need to recognise these undesirable individuals before they walked out the door with their falsely obtained winnings. For them, Biometrica's Visual Casino Suite was the answer. Using this technology, the Stratosphere database of unwanted, and the SIN network, the Stratosphere cut its losses by 90 per cent.

The savings of nearly \$500,000 in prevented losses plus estimated labour savings of \$44,000 represents a greater than 5,000 per cent return on the investment each year.

Whether casino management is concerned with catching cheats in the act or identifying VIPs on the casino floor, casino surveillance teams are challenged to identify patrons in a timely manner, allowing the staff to respond appropriately.

Timing of identification is the critical factor. However, the traditional technology employed at casinos does not identify these individuals or work in a timely manner.

Traditional means of identity verification are entirely manual, including surveillance staff scanning video feed from the casino floor and reviewing hardcopy files and stacks of video prints of known offenders to make potential matches. These photos were often faded or aged and of poor quality.

These processes used to take hours of staff time and often caused casinos to miss opportunities for making timely decisions about suspicious or valued patrons. But in recent years, many casinos have begun using the Visual Casino

technology to enhance their identity verification solutions, cutting back on the manual processes and time needed to verify identities.

The Stratosphere Hotel and Casino is one such casino that has not only recognised the time saving benefits of this technology, but the return on investment value as well.

Biometrica helped in this endeavour by understanding the casino operations and providing tools for this solution, namely the Biometrica Visual Casino suite.

The Visual Casino Suite includes: Face recognition application (FR), Surveillance Information Network (SIN), a network of 140+ casino surveillance departments, industry information databases, local database enrolment module and a video input module to capture images from any cameras and input the images into SIN alerts, local databases or into the FR system.

The local database enrolment module allowed the staff to quickly enroll the patron into the searchable databases and the Visual Casino face recognition module is used to scan for any matches to known advantage players, cheaters, undesirables, high-end players or substantial jackpot winners.

This module has been particularly useful when the Stratosphere surveillance staff has discovered the identity of patrons who have refused to provide names at the tables. In these cases the pit is notified that an advantage player is at the table, and that player is often removed. In other cases where the staff suspects advantage playing is taking place, but the casino's database shows no match for the identity, the SIN module is employed.

Using this network of over 140 local, regional and other surveillance rooms, the Stratosphere can quickly send a digital image across the network and enquire about the individual's identity.

When a match is made, then once again the surveillance staff can take proper action. In both cases, the Visual Casino system greatly reduces the amount of time needed to confirm an identity. With the former system, it would have taken the Stratosphere hours to thumb through volumes of mug shots and 86 card files. Now the identity verification is done in seconds.

At the Stratosphere, the Visual Casino system is used every day. Staff use the system several times during any given shift and it now takes about one tenth the time investigations took under the previous system. Further, changes between shifts have been made smoother through the deployment of this identity verification solution. The staff now takes notes on patrons that have already been reviewed, so the new shift does not duplicate the effort.

To date, the Visual Casino system at the Stratosphere has helped the staff uncover cases of individual advantage players as well as team players. Since the system allows the operator to link individuals with their team associates, it's far easier for surveillance staff to identify these teams than ever before.

For instance, if a card player is suspected, but there is no match in the database, the investigator can investigate their associates and within seconds possibly uncover the team play underway. Other catches at the casino have included shuffle trackers, card counters and gaming cheats.

Several stations are located throughout the surveillance room, so each surveillance operator has full use of the Visual Casino system, which reduces the time needed for research. Now when research is interrupted by unrelated phone calls, the investigator can pick up right where he/she left off.

After the implementation of the Biometrica Visual Casino Solution, the Stratosphere made it known that face recognition technology had been deployed at the casino. The networks of advantage players quickly caught on and spread the word. This ultimately translated into an instant deterrence factor for the Stratosphere. Once the casino was associated with using face recognition technology, the Stratosphere dropped off the list of 'recommended' casinos for advantage players. This factor alone has also saved the casino money, since several of these unwanted no longer frequent the casino.

In the past, the challenge of verifying the identities of casino patrons was a daunting task for surveillance personnel. A single investigation often took hours of an investigators time.

With the deployment of Biometrica's Visual Casino suite, the Stratosphere has developed a state-of-the-art identity verification solution. Now, within seconds investigators can verify identities by using their own databases as well as the SIN module, linking them to over 140 casinos. This process has also made the identification of VIPs a more efficient process, allowing casino staff to deliver the required level of service. Further, the deterrence factor of using an identity verification solution powered by face recognition technology cannot be overlooked.