



NEOFACE SOLUTION

How Lemon Tree boosts security via face recognition

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Located in the upcoming Aerocity Hospitality District in New Delhi, the 10-storey, 81-room Lemon Tree Premier—owned by Lemon Tree Hotels Ltd—needed a top-end surveillance and security system since it was difficult to track all that was happening on the property throughout the day.

An added challenge was the need to identify a solution that would best fit with the detailed mandate and prescribed guidelines provided by Indian security agencies. Besides, the upscale hotel did not want to upset its visitors by appearing to be intrusive—VIP guests, especially, are very sensitive about invasion of their privacy.

Lemon Tree Premier opted for a face recognition solution called NeoFace from the India unit of NEC Corp. to help it deliver a more secure and elevated guest experience.

Face recognition software typically identifies a face and extracts it from the rest of the background scene to compare it with a database of stored images. It is based on the ability of the software to recognize a face and then measure its various features such as distinguishable marks, distance between the eyes, width of the nose, depth of the eye sockets, shape of the cheekbones—all features that result in making a face-print, representing the face in the database.

The hotel needed a solution that helped identify faces throughout the property with high accuracy and auto-generated alerts. "Safety and security of guests has always been paramount to us. It was thus essential that we adopted a solution that would merge innovative and path-breaking technology with accuracy and consistency, but most importantly met the stringent guidelines defined by the Indian security agencies," said Sumant Jaidka, chief operating officer (North) at Lemon Tree Hotels.

The hotel worked with NEC Corp. to implement the latter's face recognition solution that is designed to capture fast and accurate facial images from live closed-circuit television (CCTV)

cameras over a standard Internet Protocol network and match it with the hotel's database in real time. The biggest advantage of the solution lies in the fact that the hotel staff does not have to disturb the guests to verify their identity as it captures facial images from a distance.

The solution also required that Lemon Tree Premier invest in upgrading its existing IT infrastructure. Both the IT and the security teams had to rapidly move up the learning curve in order to suitably test, deploy and man the solution.

Koichiro Koide, managing director of NEC India, said, "The technology has been added as an advanced layer to the existing security at the hotel which will ensure safety of the customers and will also help the authorities have a better control over the sensitive security zones."

Describing the situation, a project head at NEC India explained, "We were asked for a security system that would let the hotel staff identify a visitor even before he entered the hotel. This required us to engage deeply with the hotel security team to not just understand their exact requirements, but also conduct numerous Proofs of Concept to demonstrate the value proposition of our face recognition solution."



NEC's face recognition technology, NeoFace, can handle poor quality images, claims the company. "With high tolerance for low quality, highly-compressed surveillance videos and images, including web images, the system has the capability to register and generate match results for the control of both 'black-list' and 'white-list' images using digital photographs," says the company's website.

"The captured face is compared to all facial templates in the database, irrespective of any attempts by the person to conceal identity via the usage of caps, hats, glasses or slightest change in the facial hair. This helps determine whether the person is blacklisted or a welcome VIP customer for the particular facility," explained the project head.

NEC's face recognition solution sets a new standard for security in the hospitality sector in India. The solution

deployed was tested for various use cases and potential challenges in recognizing a facial image captured from a live CCTV camera and it delivered accurate results every time. The ability of the solution to respond in real time is a great advantage as it ensures there is no time gap between identification of an individual and personalized reaction by the hotel staff.

International Data Corp. hosted a Web conference in December last year predicting the future of digital security. Based on the findings, biometric technology, including facial recognition systems, is forecast to play an increasingly important role in digital security over the next several years.

According to a UK-based biometrics consultant Thomas Heseltine, face recognition has a number of advantages over some of the other biometrics used. In his research paper at the University of York in 2004 while doing his PhD, he wrote: "It is non-intrusive. Several other biometrics require the subject's co-operation and awareness in order to perform an identification or verification, such as looking into an eye scanner or placing their hand on a fingerprint reader; face recognition could be performed even without the subject's knowledge. Secondly, the biometric data used to perform recognition is in a format that is readable and understood by humans."

Heseltine said the other advantages of face recognition technology are that there is no association with crime as with fingerprints (few people would object to looking at a camera) and many existing systems already store face images (such as police mugshots).

"We are confident that with face recognition solution deployed at the property, we will be able to provide a much improved security set-up and hence better customer service at Lemon Tree Premier. The technology is perfect for providing unobtrusive and seamless 360° security; and the fact that it can be monitored remotely provides that additional peace of mind," said Jaidka.

The hotel, he added, is currently evaluating its application "for a 'white-list' (list of people considered to be acceptable or trustworthy) management of our VIP customers to provide a personalized experience and believe it will provide the additional differentiation in our customer service."