

NCR brings AI to Loss Prevention & Customer Experience [RILA Booth 415]



Artificial intelligence (AI) has made major inroads in biometrics, speech recognition and machine learning, to name a few technologies. And now it has a new frontier: the store checkout.

Video analytics technology, patented by [StopLift Checkout Vision Systems](#), now part of NCR, helps determine what occurs during each transaction at the retail or supermarket checkout to immediately distinguish between legitimate and fraudulent behavior. At **Booth 415** at the RILA Asset Protection Conference, visitors can see how AI works at the self-checkout.

NCR, the global leader in self-checkout technology with more than 250,000 installations worldwide, acquired StopLift in November 2018 and integrated the AI technology into its NCR SmartAssist solution.

NCR SmartAssist enables retail chains to detect and deter self-checkout theft and scan avoidance, prevent false alerts and unnecessary interventions, alert the attendant in realtime, and improve customer experience at the self-checkout.

“We’ve found that self-checkout theft and other scan avoidance has been up to five times higher than at assisted checkout,” said Malay Kundu, formerly CEO of StopLift and now General Manager of Computer Vision Solutions at NCR. “Retailers always suspected that self-checkouts would be highly prone to scan-avoidance, and our technology has certainly found this to be the case.”



NCR’s technology flags scan-avoided merchandise and unscanned merchandise left in the shopping cart – and sends a real-time alert to the attendant via wrist device or to the self-checkout screen itself. Now the attendant can take immediate and appropriate action before the customer leaves the checkout.



The AI technology also addresses ticket switching, e.g. a dishonest customer covering the bar code label of an expensive item with the bar code label of a cheaper item. Another ticket switching practice is a customer stacking an expensive item like steak over a cheap item like ramen noodles and passing them over the scanner. In some cases, a dishonest customer will even have the cheap item’s barcode taped to their wrist or in their palm as they make it appear that they are scanning the more expensive item.

“Using the incidents detected from their own stores, retailers are now able to train staff on the signals indicating when customers are either having problems using the self-checkout or are exhibiting suspicious behavior,” he said.

Interestingly, SmartAssist is the rare loss prevention solution that has the added benefit of improving the customer experience. SmartAssist uses AI computer vision technology and sensor fusion to identify aberrant behavior and then distinguishes between what is actually fraudulent

versus legitimate. For self-checkouts already including weight-based security, the technology utilizes video sensor data to complement traditional weight sensor data from the self-checkout. Armed with both, the system better tolerates weight mismatches when it sees that items were nonetheless legitimately scanned and bagged. Likewise, the system recognizes and ignores non-merchandise items (like handbags or kids) on the bag scale and other aberrant-but-legitimate situations.

It protects the customer from the annoyance of having the transaction interrupted, the embarrassment of having the self-checkout light flash, and the frustration of waiting for an attendant to come and clear it. Honest customers avoid needless delays, spend less time at the self-checkout and more positive face time with attendants. Every self-checkout customer checks out faster in a shorter line.

Store data shows a 70%+ reduction in the number of self-checkout interventions with SmartAssist. With fewer false-positive alerts, the attendant can focus on true customer service, acting properly on legitimate alerts and covering a greater number of self-checkout stations. This means greater productivity gains and associated labor savings for the retailer.

For assisted checkouts, NCR's ScanItAll system likewise constantly monitors 100% of the security video of the checkout and flags unscanned items. It quickly reports the incident, identifying the cashier and the date and time of the theft. This includes incidents due to either mistakes or deliberate actions by the cashier or the customer at a checkout, including items left in the shopping cart or reusable bag.

Incidents often include "sweethearting", when cashiers pretend to scan merchandise, but deliberately bypass the scanner, thus not charging the customer for the merchandise. The customer is often a friend, family member or fellow employee working in tandem with the cashier.

Kundu explains that this AI technology helps eliminate costly, time-consuming, human review of video, and it drastically reduces and deters fraud at the checkout, which can significantly impact profitability. Rather than take a one-size-fits-all approach, NCR develops targeted applications to address the specific needs of retailers from different sectors including general merchandise, grocery, and specialty retail.

The ScanItAll AI identifies attempted scan-avoidance, basket loss, refund fraud, etc. on the basis of video evidence the first time a fraudulent transaction is attempted, rather than months or even years down the road, significantly reducing inventory shrinkage, deterring future theft, and boosting profitability.