Putting the brakes on bike thieves

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Ph.D. student Dima Damen. Credit: Simon & Simon photography

Technology being developed at the University of Leeds could put the brakes on bicycle thieves and may also be useful in flagging suspicious events in public places.

PhD student Dima Damen, from the University's Faculty of Engineering has developed a computer system that detects individuals parking their bicycles and can automatically warn security staff if it appears that someone other than the owner retrieves the vehicle.

"It's difficult to monitor CCTV cameras, as operators normally have a large number of screens to watch," says Damen. "This often results in bicycle thefts being missed, even if they are happening right in front of the camera."

Over 500,000 bicycles are stolen annually in the UK and only five per cent of these are returned to their owners. The increase in the number of people travelling by bicycle as an more eco-friendly method of transport has provided greater opportunities for bicycle thieves across the UK and while many local councils have located CCTV cameras above public bicycle racks, their effectiveness in deterring thieves is limited.

Currently at prototype stage, Damen's system takes colour information from CCTV images when a bike is parked and stores it until the bike is retrieved. It then marries the stored information with the new image and where there are significant differences, it can raise an alert to CCTV operators. In initial tests using a camera located above a bike rack at the University of Leeds, eleven out of thirteen simulated thefts were detected.

"Without a system like this, the benefit of CCTV cameras is diminished by the difficulties of manual monitoring," says Damen. "It's a simple solution to an extremely widespread problem."

Damen is now developing her technology to identify suspicious events in public places, such as the problem of baggage - especially in airports. "Someone intending to leave a suspicious package won't leave it in full view of a CCTV camera, but may choose to leave it in a toilet or behind a pillar," says Damen. "We think we can engineer this technology to recognise people who enter 'flagged' areas with a package or bag, but then leave without it, raising an alert for security staff. That's my next challenge."

Source: University of Leeds

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