VISION SYSTEMS CASE STUDIES

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Industry transformation

MANUFACTURING	Precision Engineering
	Energy & Chemicals
	Marine & Offshore
	Aerospace
	Electronics
BUILT ENVIRONMENT	Construction
	Real Estate
	Security
	Environmental Services
MODERN SERVICES	Professional Services
	Financial Services
	ICT & Media

MANUFACTURING

BUILT ENVIRONMENT

TRADE & CONNECTIVITY

ESSENTIAL DOMESTIC SERVICES

MODERN SERVICES

LIFESTYLE

TRADE & CONNECTIVITY	Wholesale Trade
	Land Transport
	Sea Transport
	Air Transport
	Logistics
LIFESTYLE	Food Manufacturing
	Food Services
	Hotels
	Retail
ESSENTIAL DOMESTIC SERVICES	Healthcare
	Education

Reference: https://www.mti.gov.sg/ITMs/Overview

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Manufacture

MANUFACTURING	Precision Engineering
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	Environmental Services
MODERN SERVICES	Professional Services
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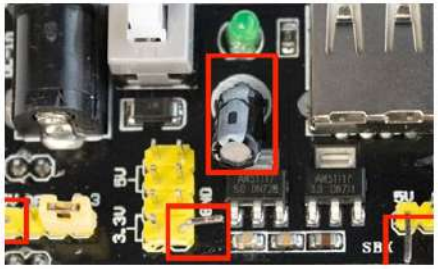
	ICT & Media



TRADE & CONNECTIVITY	Wholesale Trade
	Land Transport
	Sea Transport
	Air Transport
	Logistics
ESSENTIAL DOMESTIC SERVICES LIFESTYLE	Food Manufacturing
	Food Services
	Hotels
	Retail
	Healthcare
	Education

Reference: http://www.landing.ai

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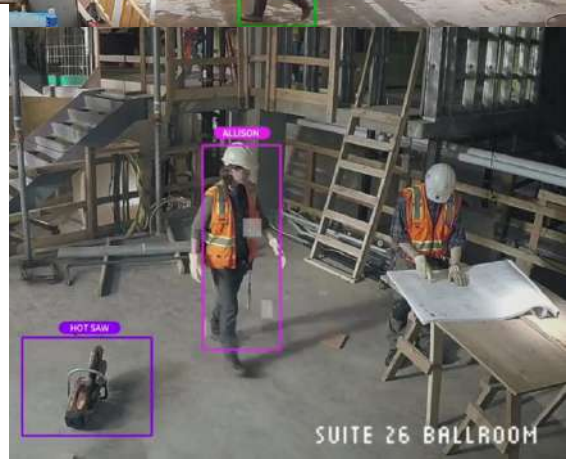
Construction

MANUFACTURING	Precision Engineering
	Energy & Chemicals
	Marine & Offshore
	Aerospace
	Electronics
BUILT ENVIRONMENT	Construction
	Real Estate
	Security
	Environmental Services
MODERN SERVICES	Professional Services
	Financial Services
	ICT & Media



TRADE & CONNECTIVITY	Wholesale Trade
	Land Transport
	Sea Transport
	Air Transport
	Logistics
LIFESTYLE	Food Manufacturing
	Food Services
	Hotels
	Retail
ESSENTIAL DOMESTIC SERVICES	Healthcare
	Education

Reference:

- https://www.youtube.com/4HxOZCxF_mY;
- https://marionoioso.com/2018/02/01/artificial-intelligence-computer-vision/
- https://www.pub.gov.sg/drainage/earthcontrolmeasures/SIDS

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Real estate

MANUFACTURING
- Precision Engineering
- Energy & Chemicals
- Marine & Offshore
- Aerospace
- Electronics

BUILT ENVIRONMENT
- Construction
- **Real Estate**
- Security
- Environmental Services

MODERN SERVICES
- Professional Services
- Financial Services
- ICT & Media

TRADE & CONNECTIVITY
- Wholesale Trade
- Land Transport
- Sea Transport
- Air Transport
- Logistics

ESSENTIAL DOMESTIC SERVICES LIFESTYLE
- Food Manufacturing
- Food Services
- Hotels
- Retail
- Healthcare
- Education

Reference
- https://medium.com/geoai/swimming-pool-detection-and-classification-using-deep-learning-aaf4a3a5e652
- https://venturebeat.com/2019/06/26/zillow-now-uses-computer-vision-to-improve-property-value-estimates/

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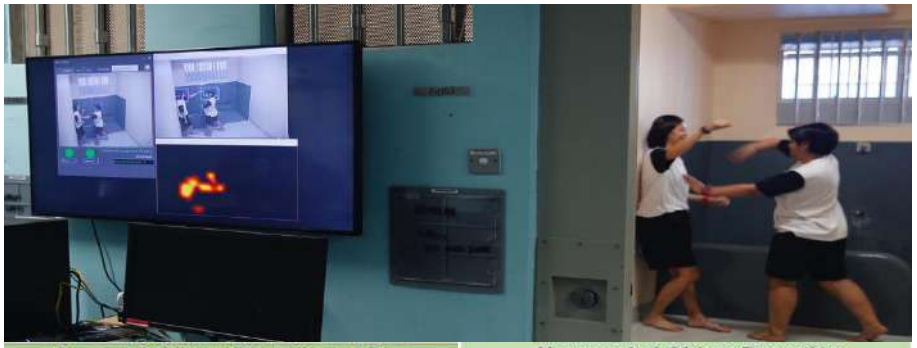
Security



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	Retail
ESSENTIAL DOMESTIC SERVICES	Healthcare
	Education

Reference:

- https://www.channelnewsasia.com/news/singapore/changi-prison-raises-tech-bar-with-automated-checks-surveillance-10455870
- https://www.channelnewsasia.com/news/business/new-tech-tested-at-sentosa-can-spot-unattended-objects-intruders-9135128

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Environmental services

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BUILT ENVIRONMENT	Construction
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MODERN SERVICES	Professional Services
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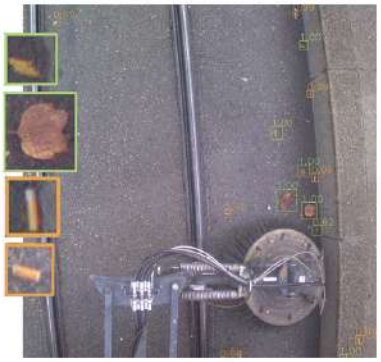

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LIFESTYLE	Food Manufacturing
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ESSENTIAL DOMESTIC SERVICES	Healthcare
	Education

Reference: http://theindependent.sg/nea-confirms-it-installed-cameras-in-hdb-housing-estates-not-to-detect-smoking-but-for-high-rise-littering; A Computer Vision System to Localize and Classify Wastes on the Streets, https://arxiv.org/abs/1710.11374

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Financial services

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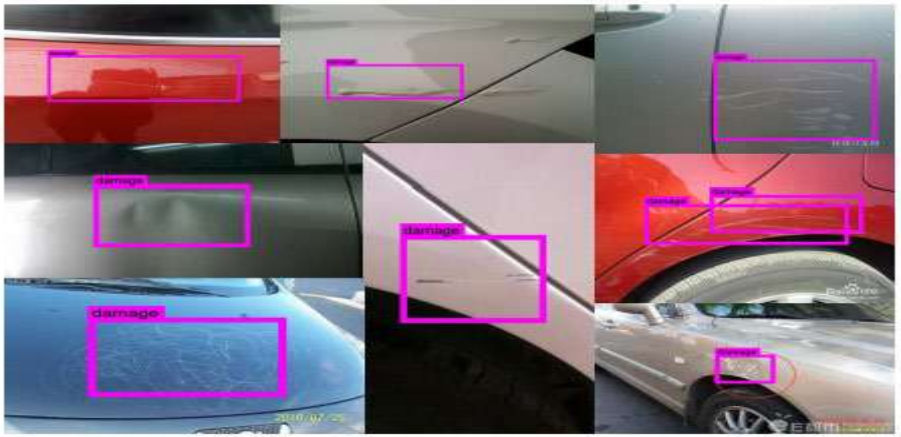

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Reference: https://www.scmp.com/business/banking-finance/article/2117469/big-data-could-help-bring-micro-lending-millions-left-out

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ICT & media

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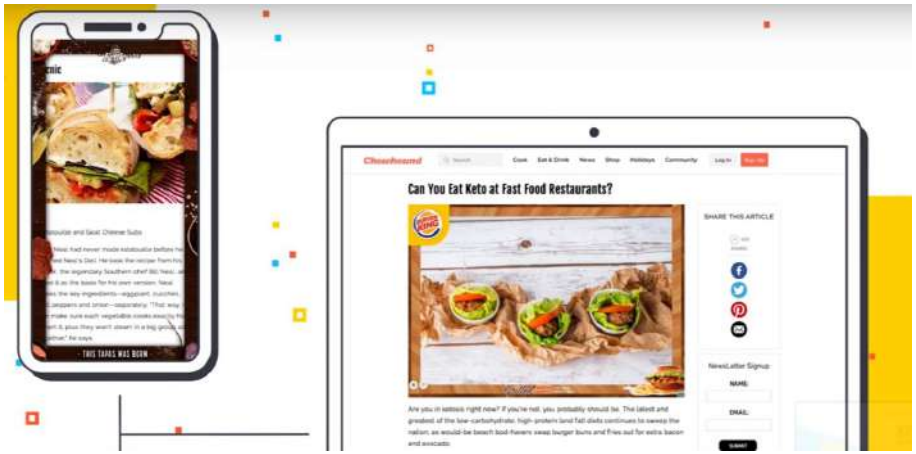

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Reference: http://www.moviebook.cn/product/videoyi; http://www.gumgum.com

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Transport and logistics

Changi Airport testing facial recognition systems to find late passengers

When Terminal 4 opens later this year, most travellers will be able to bypass manned counters and opt for self-service options from check-in to boarding.

1 Enter the booking reference or scan passport (depending on the airline) to retrieve the flight booking, select seat (where available) and print boarding pass and bag tag(s).

2 A photo of the passenger is captured and matched against the photo in the scanned passport before the luggage is accepted. Sensors will alert airport staff if bag is oversized, for example.

3 Immigration clearance comprises a dual facial and thumbprint biometric recognition system. The passenger's photo is captured and matched against the one in the passport.

4 At the boarding gate, passengers need to scan their boarding pass and authenticate their identity by taking a final photo. The facial recognition system matches this photo against the one taken earlier.

ST PHOTOS: DESMOND FOO, OLIVIA CHANG STRAITS TIMES GRAPHICS

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TRADE & CONNECTIVITY
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- Air Transport
- Logistics

LIFESTYLE
- Food Manufacturing
- Food Services
- Hotels
- Retail

ESSENTIAL DOMESTIC SERVICES
- Healthcare
- Education

Reference:
- https://blog.econocom.com/en/blog/retail-and-logistics-a-revolution-in-the-supply-chain/;
- https://www.youtube.com/watch?v=6Jm6d03GuHo;

Reference:
- https://www.businesstimes.com.sg/transport/changi-airport-testing-facial-recognition-systems-to-find-late-passengers

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Food services

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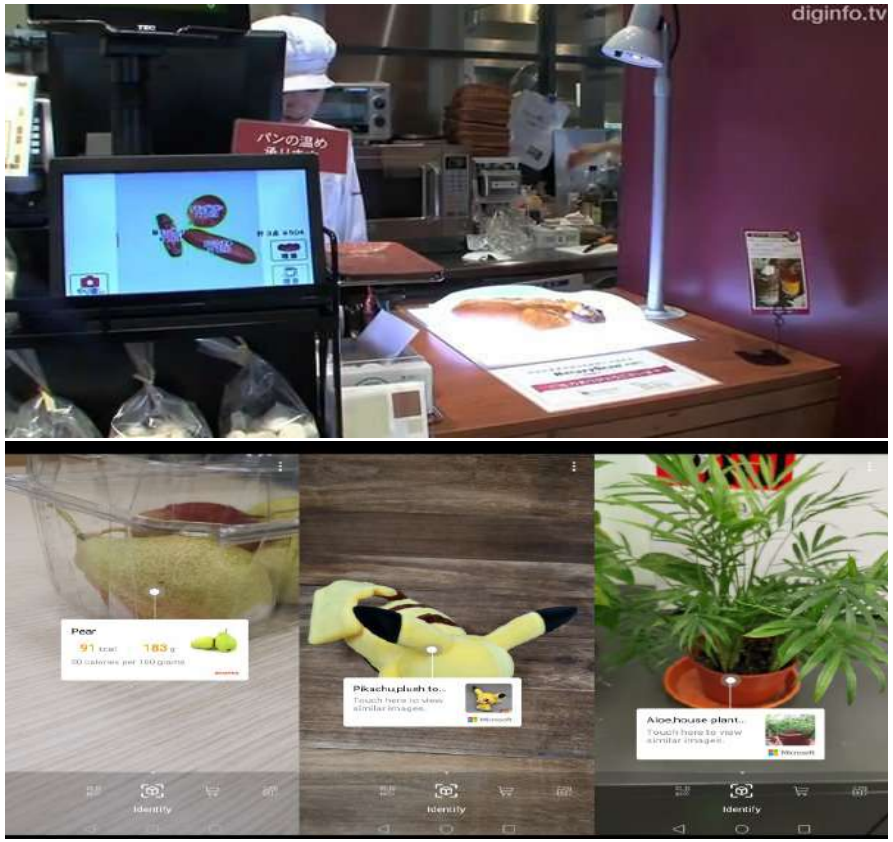

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Photo: https://www.engadget.com/2012/07/27/visual-recognition-bakery-checkout;
https://www.hardwarezone.com.sg/feature-huawei-mate-20-hivision-aiobject-recognition-feature-preview

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Hotels and retail

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computer vision to help commercial kitchens cut food waste

PAUL SAWERS @PSAWERS MARCH 21, 2019 5:10 PM

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- https://www.lsa-conso.fr/mediatheque/2/9/6/000257692_87.jpg

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Healthcare

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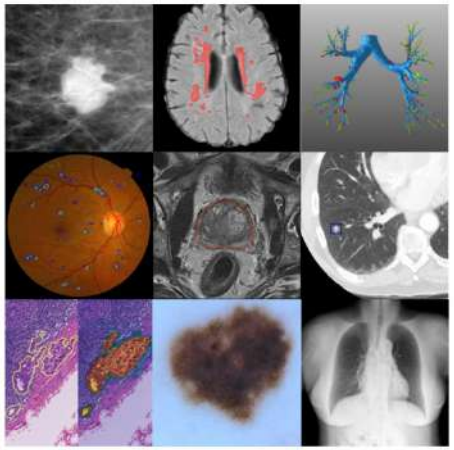

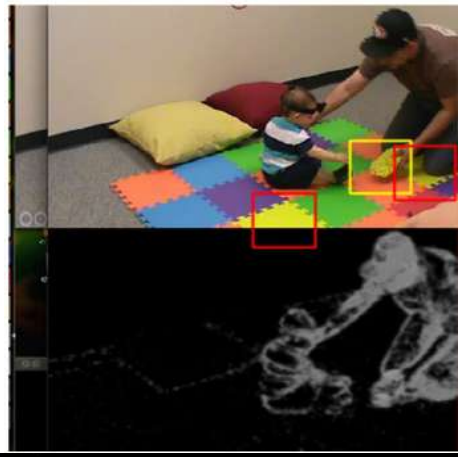

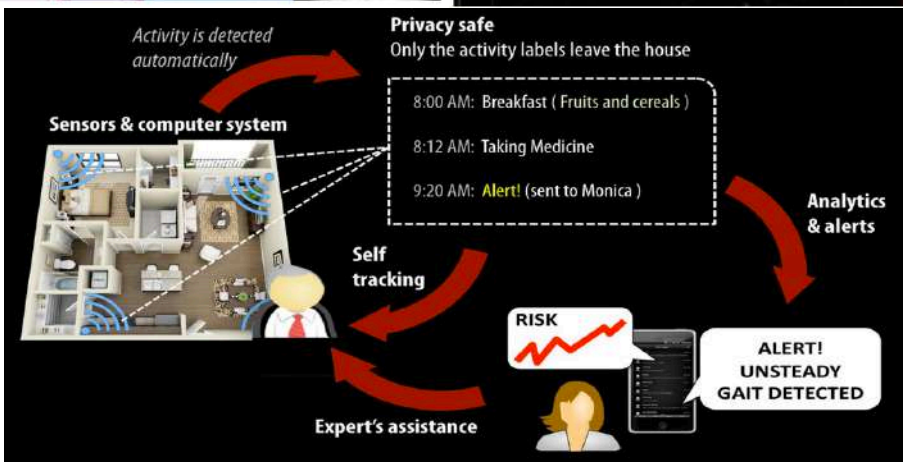

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ESSENTIAL DOMESTIC SERVICES LIFESTYLE
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Photo: http://stanfordhealth.weebly.com; https://arxiv.org/pdf/1702.05747.pdf

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Education

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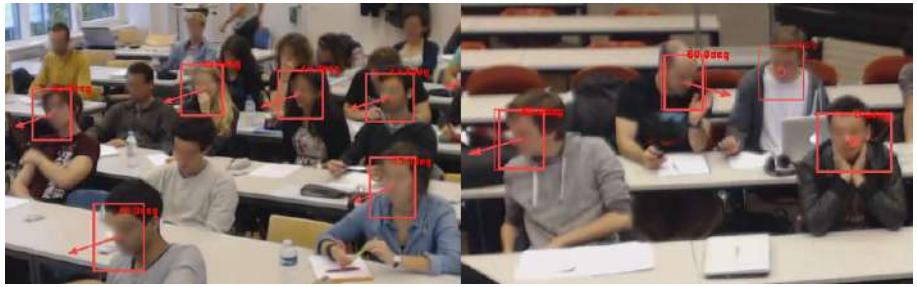

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Reference: https://chili.epfl.ch/page-92073-en-html/page-92240-en-html/page-126025-en-html/;https://mathpix.com/

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Thank You.

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