





### **VISION SYSTEMS CASE STUDIES**

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## Industry transformation





D N	Precision Engineering
MANUFACTURING	Energy & Chemicals
ACT	Marine & Offshore
	Aerospace
MA	Electronics
L Z	Construction
ΨZ	Real Estate
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Reference: https://www.mti.gov.sg/ITMs/Overview







MANUFACTURING **Precision Engineering** Energy & Chemicals Marine & Offshore Aerospace **Electronics** BUILT ENVIRONMENT Construction Real Estate Security









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Reference: http://www.landing.ai

Professional Services
Financial Services
ICT & Media

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Environmental Services



Precision Engineering

Energy & Chemicals

Marine & Offshore

Aerospace

**Electronics** 





MANUFACTURING

MODERN

Professional Services
Financial Services
ICT & Media

Construction

Real Estate

Security

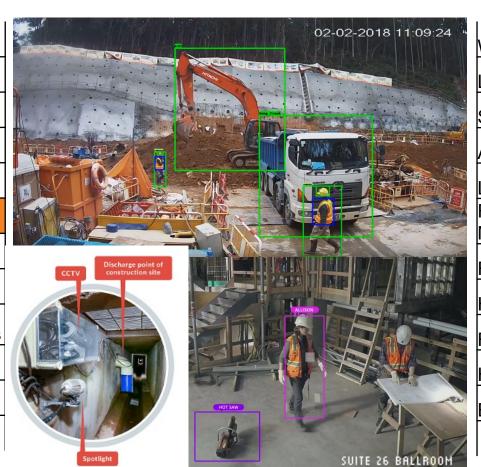
Environmental Services

Reference:

https://www.youtube.com/4HxOZCxF\_mY;

https://marionoioso.com/2018/02/01/artificial-intelligence-computer-vision/

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MANUFACTURING Precision Engineering Energy & Chemicals Marine & Offshore Aerospace

Construction

Real Estate

**Electronics** 

Security

BUILT ENVIRONMENT

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Financial Services





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#### 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



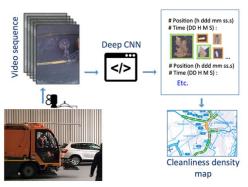
# Environmental services





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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

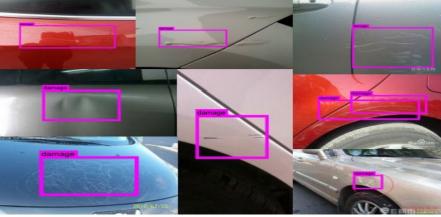






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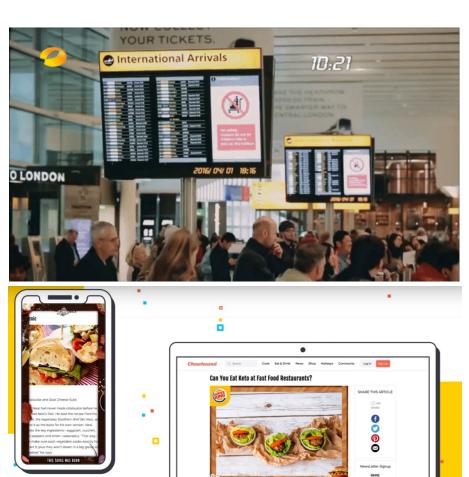
Reference: https://www.scmp.com/business/banking-finance/article/2117469/big-data-could-help-bring-micro-lending-millions-left-out







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



## Transport and logistics





CONNECTIVITY

**IRADE &** 

### Changi Airport testing facial recognition systems to find late passengers

MANUFACTURING Precision Engineering Energy & Chemicals Marine & Offshore Aerospace **Electronics** Construction

Real Estate

Security

Professional Services

**Environmental Services** 

Financial Ser Financial Services

#### Reference:

MODERN

- https://blog.econocom.com/en/blog/retail-andlogistics-a-revolution-in-the-supply-chain/;
- https://www.youtube.com/watch?v=6Jm6d03G uHo;

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.

Enter the booking reference of scan passpor (depending on the airlinel to retrieve the flight booking, select seat available) and print boarding





against the photo in the scanned passport before the luggage is accepted. Sensors will alert airport staff if bag



igration clearance comprises a dual facial and thumbprint biometric recognition system. The passenger's photo is captured and matched



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



### Wholesale Trade Land Transport Sea Transport

Air Transport

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Food

Manufacturing

Food Services

Hotels

Retail

Healthcare

**Education** 

#### Reference:

https://www.businesstimes.com.sg/transp ort/changi-airport-testing-facialrecognition-systems-to-find-latepassengers

DOMESTIC SERVICES

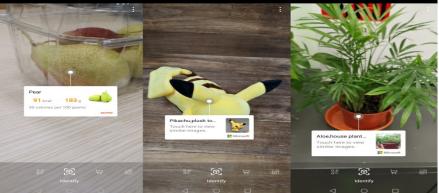






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Photo: https://www.engadget.com/2012/07/27/visual-recognition-bakery-checkout; https://www.hardwarezone.com.sg/feature-huawei-mate-20-hivision-aiobject-recognition-feature-preview

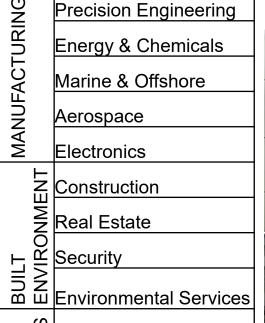






#### computer vision to help commercial

#### kitchens cut food waste



MANUFACTURING

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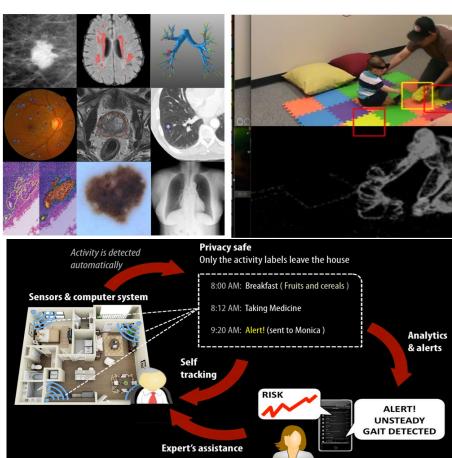




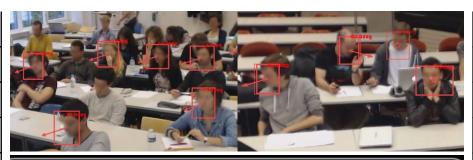
Photo: http://stanfordhealth.weebly.com; https://arxiv.org/pdf/1702.05747.pdf







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





## Thank You.

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