
Artificial Intelligence

on Digital Industry

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**THERE ARE ONLY 300.000
AI ENGINEERS WORLDWIDE.**

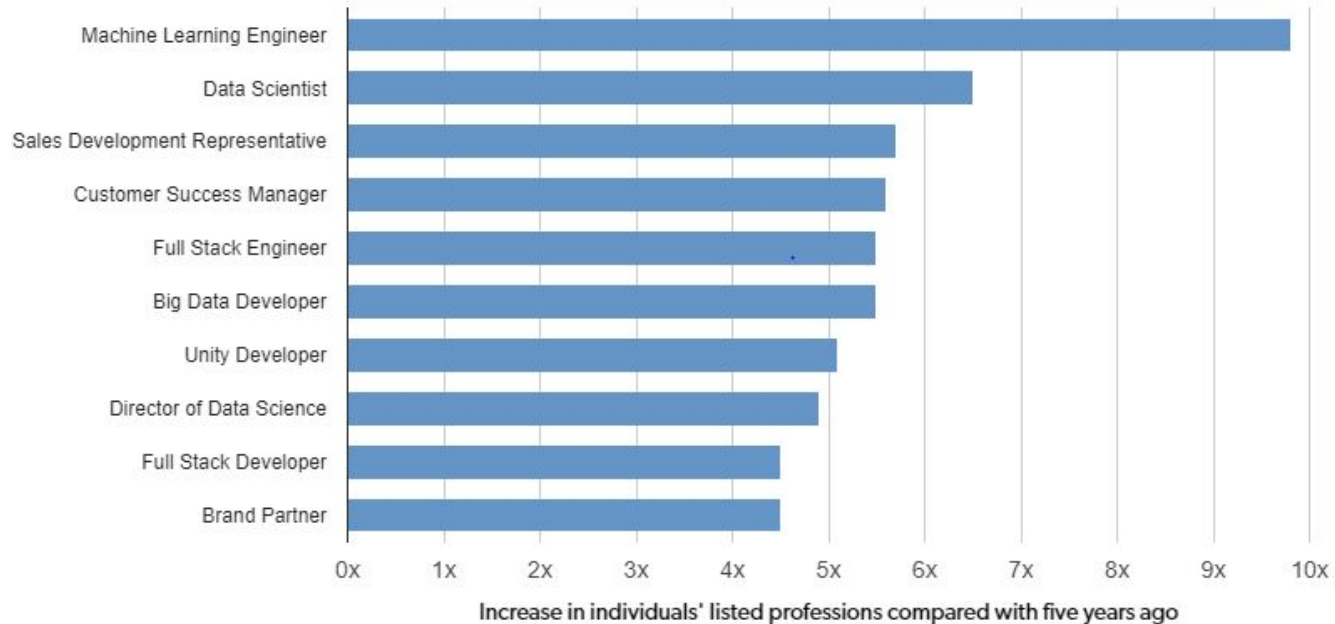
but the market demands is for 1 million

(Tencent, 2017)

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AI DEVELOPER HAS BECOME THE TOP EMERGING JOB IN THE US

On 2018, machine learning was ten times the number of individuals listing it as their profession compared with 2013



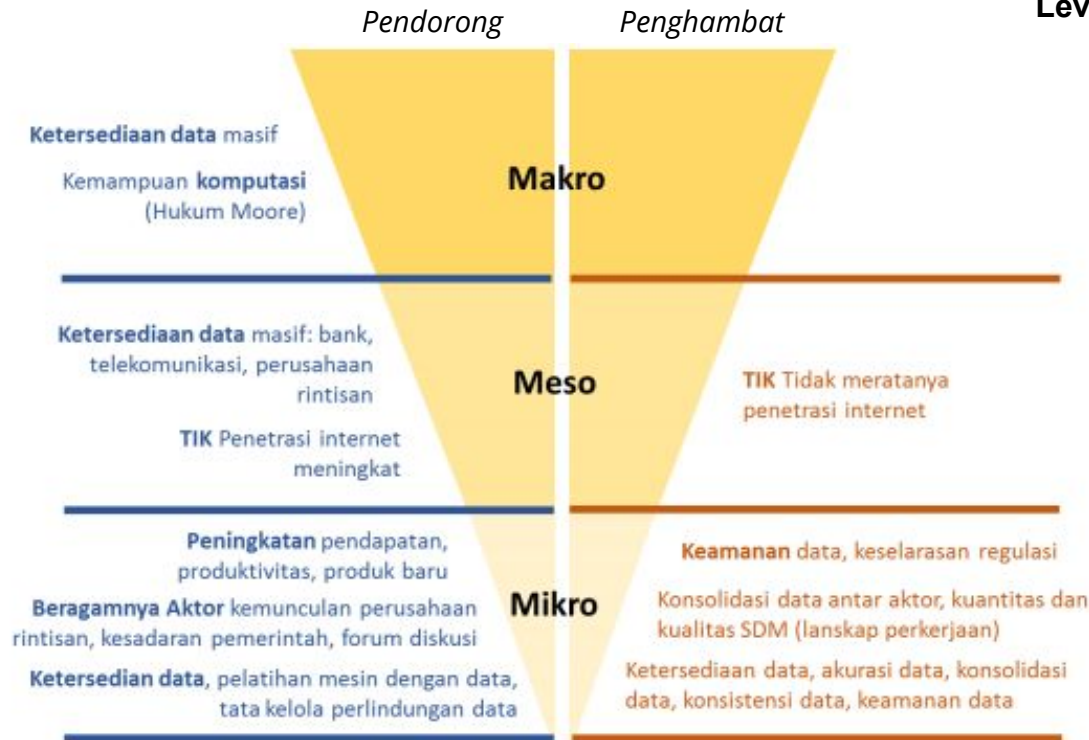
NUMBER OF AI TALENT WORLDWIDE

Based on LinkedIn, 2018



Country	Numbers
USA	9.010
UK	1.861
Canada	1.154
France	797
Spain	606
China	413
Singapore	291
South Korea	147

Perkembangan Big Data - AI di Indonesia



Level Hal yang mempengaruhi Inovasi

Pengaruh eksternal yang bersifat masif dan mengglobal, seperti pelemahan makro ekonomi, fluktuasi harga minyak dunia, dan gejolak budaya.

Tata perilaku umum untuk melakukan fungsi sosial tertentu, seperti regulasi, kebiasaan masyarakat, dan kompetensi masyarakat.

Ruang untuk inovasi tumbuh.

OPPORTUNITIES & CHALLENGES IN INDONESIA

Factor	Opportunities	Challenges
Technology	<ul style="list-style-type: none">❑ Investment on AI❑ AI-based startup become more common	<ul style="list-style-type: none">❑ Lack of qualified workers❑ The cost is high
User	AI could help in decision making	Privacy & security
Data	Increasement in data volume that created from different sector	<ul style="list-style-type: none">❑ Lack of data management❑ Lack of comprehensive cloud-based services
Infrastructure	Increasement in internet penetration	Yes the internet has been penetrating a lot more, but not equal in every places

Possibility

Artificial Intelligence Application

on Use Case in Industry



Optical Character Recognition



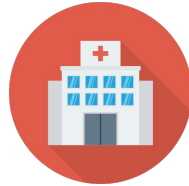
Document Digitization

The system will be able to convert physical document into digitized file. It will help client on many things.



Banking

Digitize all of their printed documents such as affidavits, judgments, filings, statements, wills via OCR



Healthcare

Scan reports that contain X-rays, previous diseases, treatments or diagnostics, tests, hospital records, insurance payments.



Legal

Digitize all of their printed documents such as affidavits, judgments, filings, statements, wills via OCR.



Insurance

Claims processing can be automated by OCR and supporting technologies



Plate Number Recognition

Recognizing number and letter on license plates from vehicles for automated system.



OCR-Based registration

User just need to show the id card to complete online registration.

OCR Digitalizes The Text In a Receipt

Store #05666
 3515 DEL MAR HTS,RD
 SAN DIEGO, CA 92130
 (858) 792-7040

Register #4 Transaction #571140
 Cashier #56661020 8/20/17 5:45PM

wellness+ with Plenti
 Plenti Card#: 31XXXXXXXXXX4553
 1 G2 RETRACT BOLD BLK 2PK 1.99 T
 SALE 1/1.99, Reg 1/4.69
 Discount 2.70-

1 Items	Subtotal	1.99
	Tax	.15
	Total	2.14

MASTER
 MASTER card * #XXXXXXXXXXXX5485
 App #AA APPROVAL AUTO
 Ref # 05639E
 Entry Method: Chip

OCR Receipt Example

Output

Store #056663515
 DEL MAR HTS,RD
 SAN DIEGO, CA 92130
 (858) 792-7040Register #4 Transaction
 #571140
 Cashier #56661020 8/20/17
 5:45PMwellnesst+ with Plenti
 Plenti Card#: 31XXXXXXXXXX4553
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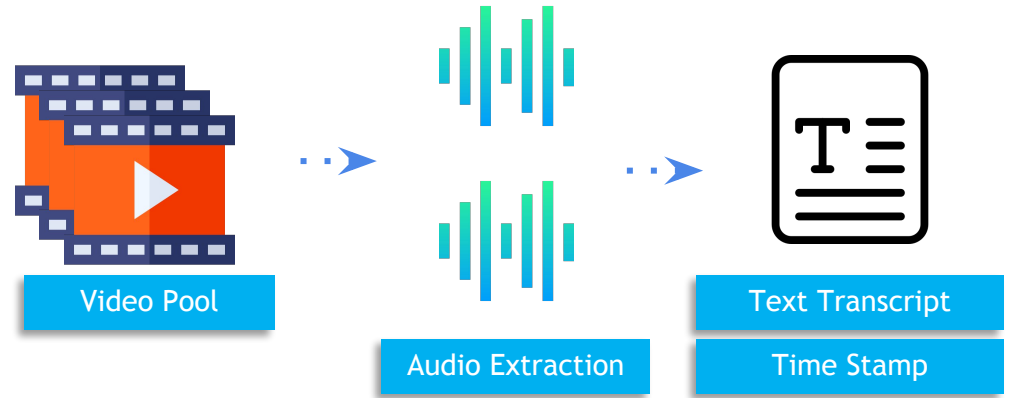
Speech to Text

Video Transcript

Many StartUp use AI to analyze the data they got from voice transcription.

Insight from customer extracted lot of better and deeper with the helps from AI.

- Video Indexing based on Content
- Brand Analytic
- Sentiment Analytic
- Topic Highlight



Object Detection

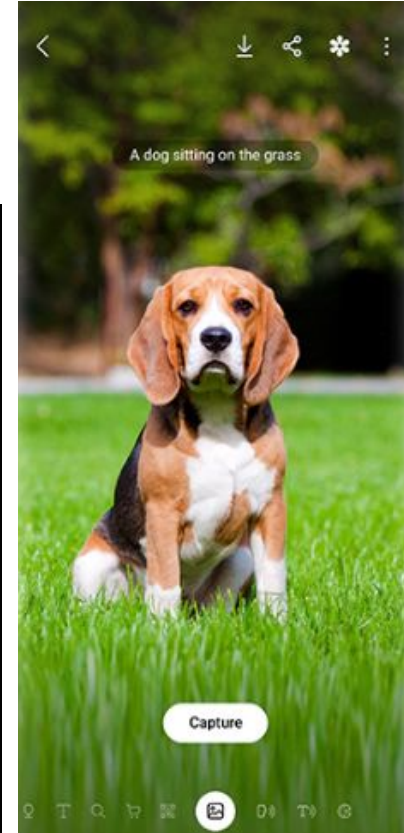
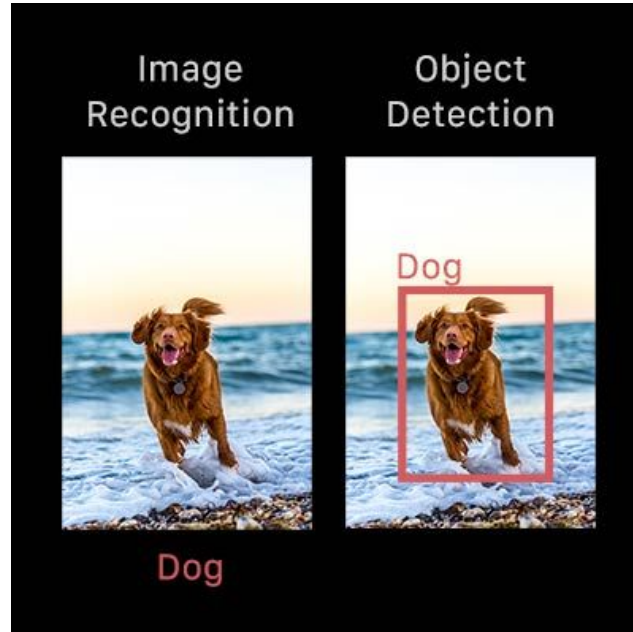
What is Object Detection?

Object detection is a computer vision technique that works to **identify** and **locate** objects within an image or video.

Image Recognition

VS

Object Detection





The Ability of Object Detection



Real-time Detection

Detect objects and make inferences within microseconds.

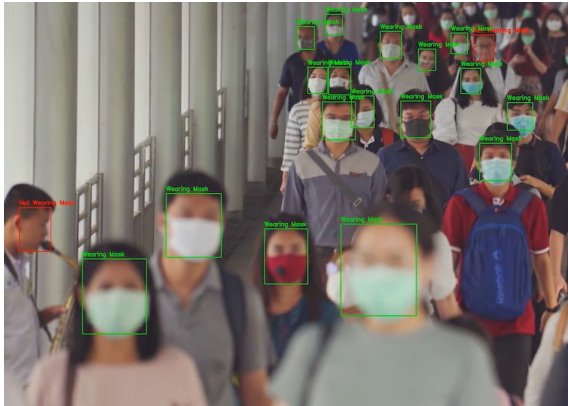


Locate objects within an image or video

Not only identify the object, but also can specify locate the object. This allows us to count and track those objects.

Object or Crowd Count

Counting the number of objects is helpful in a variety of ways, including analyzing the performance of a store, estimating the number of people in a crowd (during this pandemic situation), count the number of car while traffic jam



Integrated with face mask recognition

Anomaly Detection In Agriculture

A custom object detection model could accurately **identify and locate potential instances of plant disease**, allowing farmers to detect threats to their crop yields that would otherwise not be discernible to the naked human eye.



Another Use Case

The Shelf Detector System For Retail Stores Using Object Detection



Automatic Stock Replenishment

Real-time shelf monitoring, the store can be used as a warehouse for online orders.

“ Inventory distortion costs globally nearly \$1.1 Trillion. On average, each store could increase sales by 7.5 percent, if it could completely fix this problem.

Automating defect detection with AI in manufacturing company

Key Impact

25
percent

cost saving due to preventive AI defect detection



Production efficiency and employee productivity



Quality inspection in manufacturing

Object detection can detect any defect on production line.

Automated Storage In Warehouse; Combining OCR and Object Detection



Read the barcode and letters on the warehouse shelf, which contains information about the quantity of boxes located on it

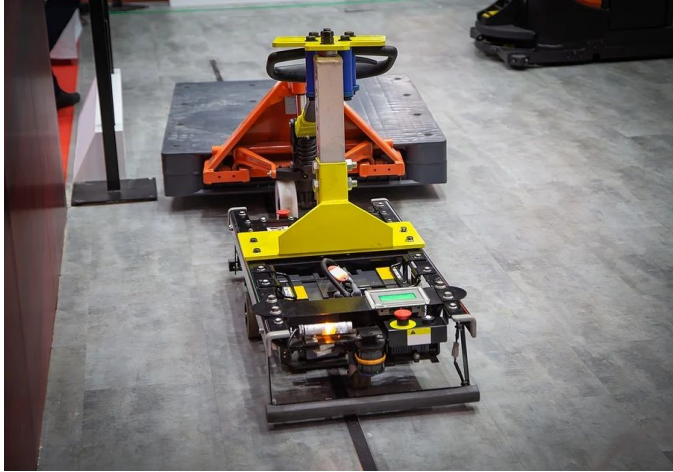


Detect the objects in the image and count them



Verify if the number of boxes in the image matches the number stored in the database

Automated Guided Vehicle In Industry



Automated Guided Vehicle



Vision guided systems utilize computer vision to interpret the surroundings of the AGV

**NO MORE
REPETITIVE TASKS**
involving the movement of
the product

**INCREASE WORKER
SAFETY**
prevent human error while
moving the heavy objects

Thank you