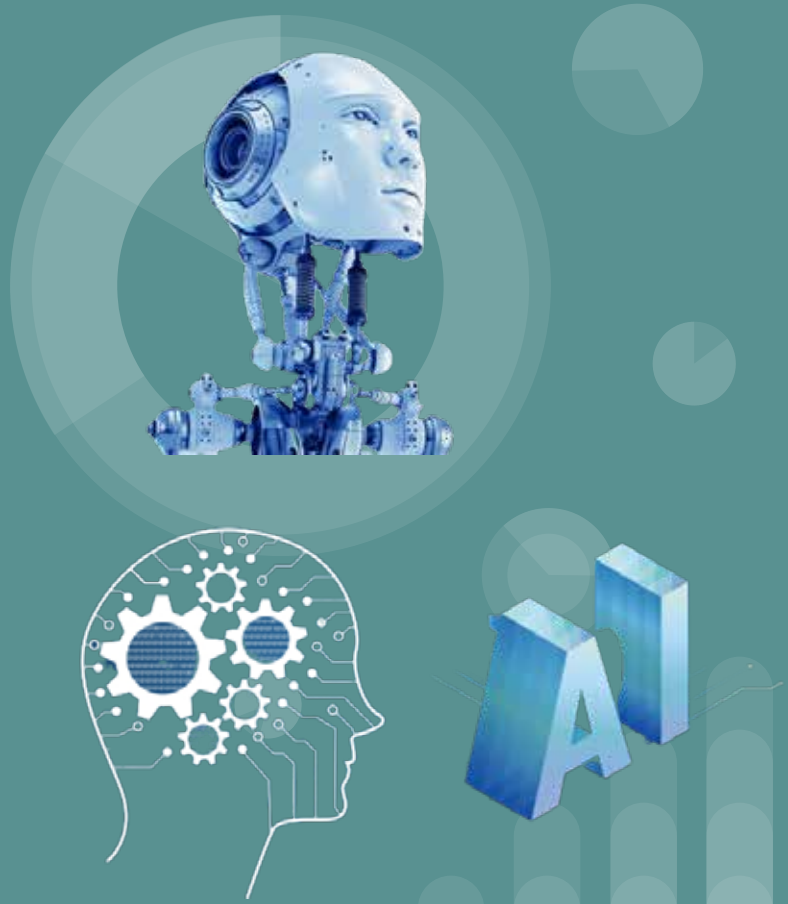
Group 1 - IntelliAI

Discipline - Planning

Digital Technology - Machine learning / AI



Client: Townland

TOWNLAND

ADB

AEROTROPOLIS

Agung Sedayu Group

CIPUTRA

CLP

HONG KONG HOUSING SOCIETY

HOPEWELL

Indiabulls

JLL

MNC

MTR

RELIANCE

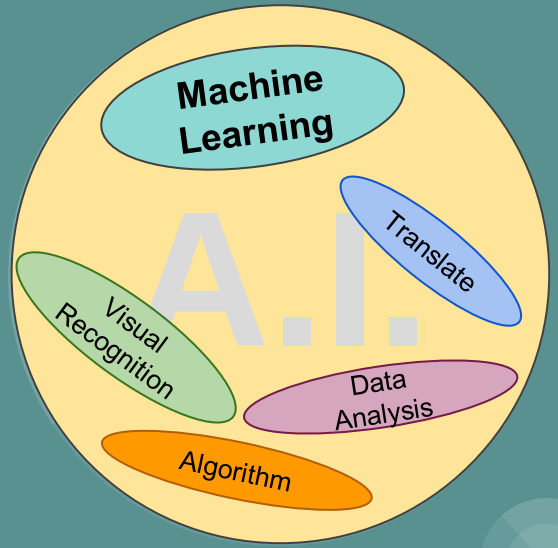
summarecon

TATA

VIVAGROUP

Definition

AI (Artificial Intelligence)
English Oxford Living Dictionary : “The theory and development of **computer systems** able to **perform tasks normally requiring human intelligence** , such as visual perception, speech recognition, decision-making, and translation between languages.



Machine Learning
Trimble: A **subset of AI.** Machine learning is a field of artificial intelligence that uses **statistical techniques** to give computer systems the ability to **"learn" from data** , without being explicitly programmed.

Advantage and of AI / Machine Learning

Value of AI / Machine Learning

02 Time

Case Study of Singapore

Population density increased by 20% over a decade and a steady growth is expected.

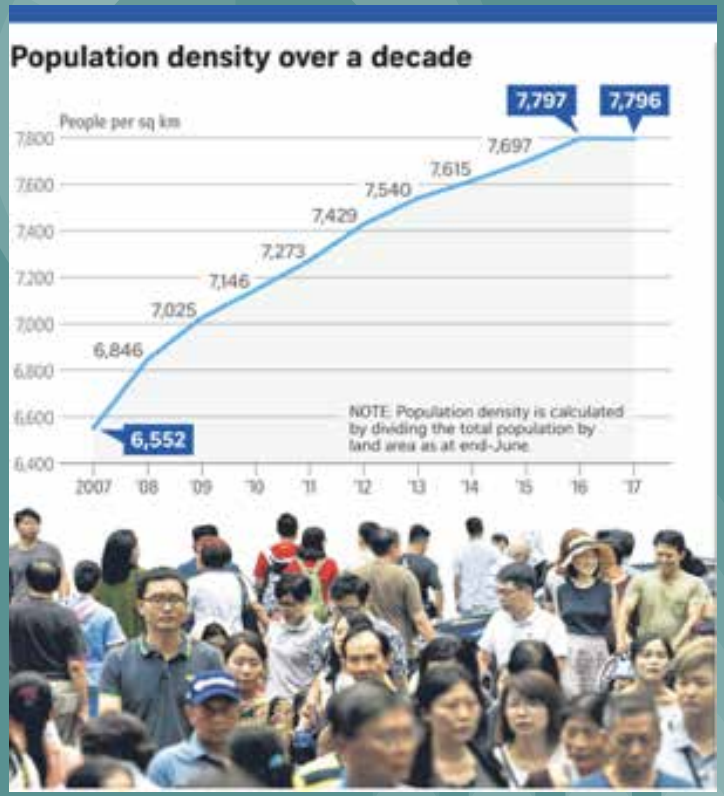
Singapore government intend to

1) build a smart city through a good urban planning to improve the living standards of citizens.

1) Optimize land use by putting the transportation and facilities underground to free up land on the surface.

A good spatial understanding of the whole city is a key to success.

GIS with AI technology is currently adopted by the Singapore government.



National SDI for Singapore in Smart City Project

(First Phase) Technology used for data capture:

Airborne Imaging and Scanning is applied for capturing building surface and rural area, Mobile Mapping and Scanning for capturing urban area and tunnel, and Ground Penetrating Radar (GPR) for detecting underground utilities.

Complete and accurate 3D Spatial Data

National SDI for Singapore in Smart City Project

(Second Phase) Integrating different type of 3D spatial data in GIS with AI analysis:

By analyzing building and population statistics, the AI system can suggest possible and suitable above ground and underground space for the future infrastructure

(Next phase) With real time sensors installed in the buildings or public transport
>>> real time analysis can be done by AI calculation

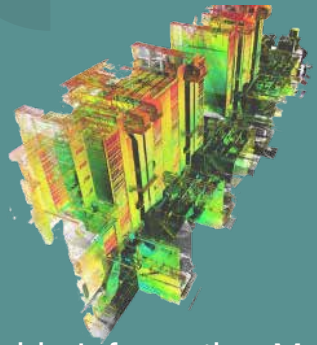
Opportunities to TOWNLAND

Urban Planning

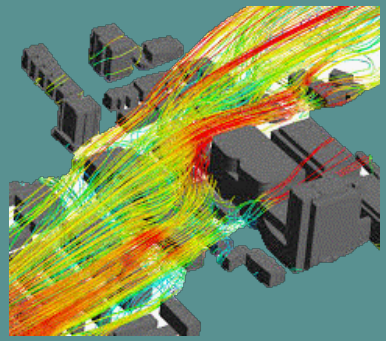
TOWNLAND

Architecture

Opportunities to TOWNLAND



Reliable Information Model



Multidimensional analysis

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Traffic Analysis

Maximize Buildability

IPD

integrates people, system, business structure and practices

collaboratively harnesses the talents and insights of all participants

optimise project results, increase value to the owner, reduce waste, and maximise efficiency

through all phases of design, fabrication, and construction

AI planning

Artificial Neural Networks

Automates project activities which follow order

Fuzzy Logic

Prioritizes projects to reshape the management processes

Logic Programming

Reinforcement Learning

Cognitive Science

Expert Systems

Accurately pinpoints project requirements

Thank you