



THE ANALYST IN AI WORLD

WG CDR DEVINDER S CHAWLA (RETD)
INDIAN AIR FORCE

KEEPING IT SIMPLE

No Boundaries

Physical, Organisations, Technological

Decision Making

Managing Outcomes





More than 400 Satellites

Appx 600 TB of data on regular basis

Data Deluge

OSTM/Jason 2

Aquarius

Aqua

TRMM

EO-1

Terra

Landsat 7

ACRIMSAT

Suomi NPP

SORCE

GRACE

Landsat 8

CALIPSO

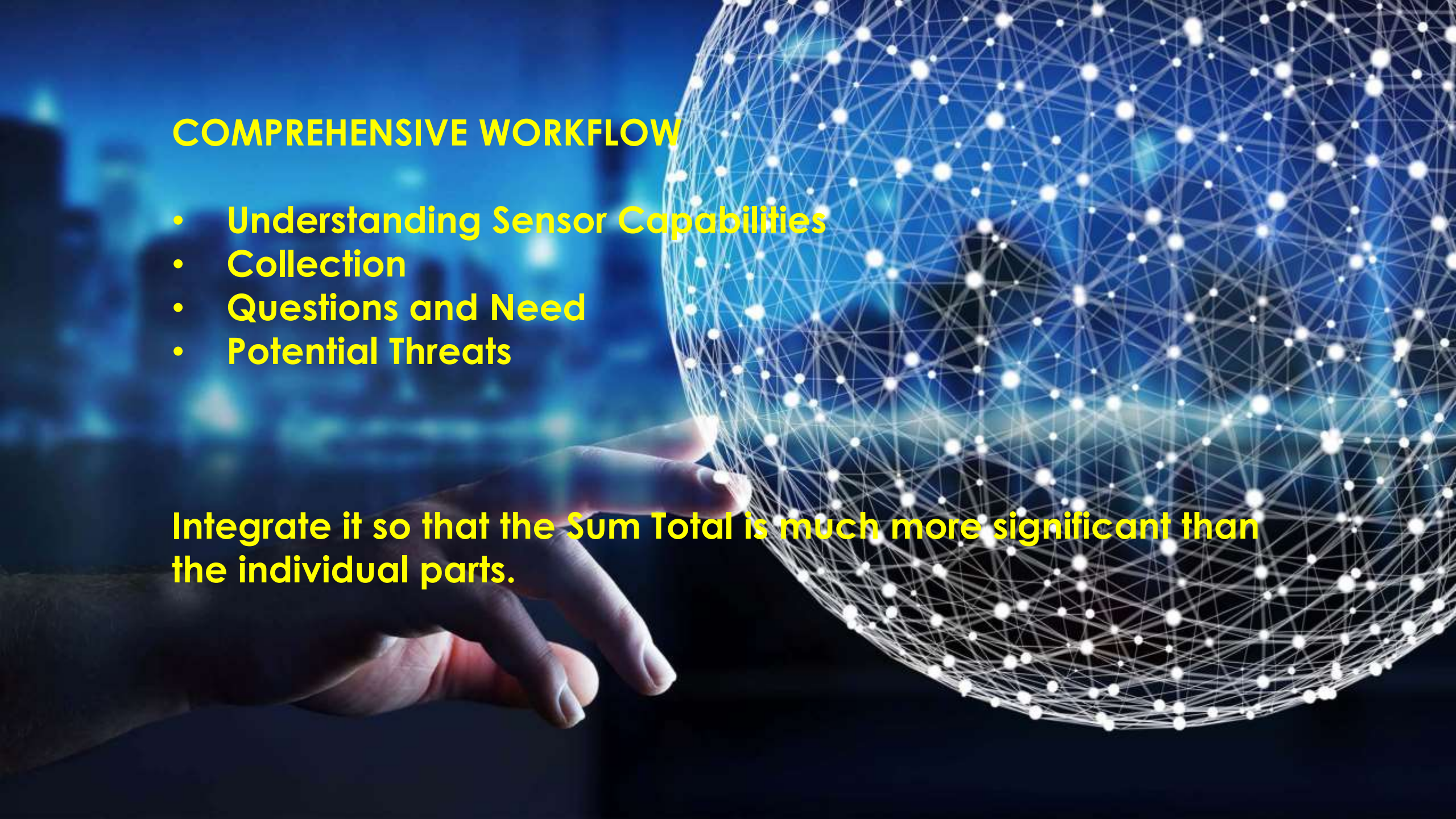
CloudSat

- 
- ▶ **Time is the key and ability to reduce the search Space to Assimilate, Integrate, Analyse and Respond is paramount.**

COMPREHENSIVE WORKFLOW

- Understanding Sensor Capabilities
- Collection
- Questions and Need
- Potential Threats

Integrate it so that the Sum Total is much more significant than the individual parts.



- 
- **Timeliness** Products and/or content are published when I need them.
 - **Responsiveness** My requests are promptly addressed.
 - **Reliability** Products and/or content are consistent in their level of quality.
 - **Accuracy** Products and/or content accurately reflect ground truth.
 - **Relevance** Products and/or content are pertinent to my needs.
 - **Usefulness** I can apply products and/or content to my mission.
 - **Discoverability** I can easily find the products and/or content I need.
 - **Accessibility** I can get products and/or products in the format in which I need it.

MILITARY INTELLIGENCE



What strangers
think I do



What my family
thinks I do



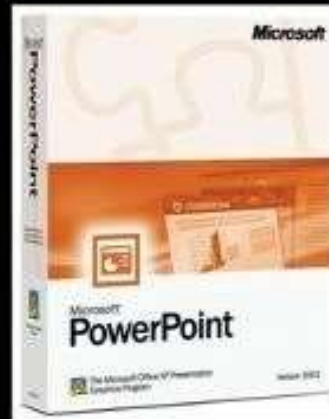
What my recruiter
said I would do



What Hollywood
thinks I do



What I think I do



What I actually do

INTELLIGENCE ANALYST

noun.[in-tel-i-juh ns an-l-ist]

Someone who does precision
guesswork based on unreliable
data provided by those of
questionable knowledge.

See also *wizard, magician*

Data Analyst

They figure out what the data means

Technical Skills

Data analysts typically use computer systems and complex calculations applications to get their numbers nailed down, but there is still a lot of intellectual know how that goes into making these systems work.

Applications

How do Data Analysts use this data



Purpose

Their job is to assign numerical values to different business functions, and are responsible for identifying efficiencies, problem areas, and possible improvements.

Data

What do they do with all the statistical data?



Why

This is a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information.



Artificial Intelligence



Machine Learning

Robotics

Model

NLP

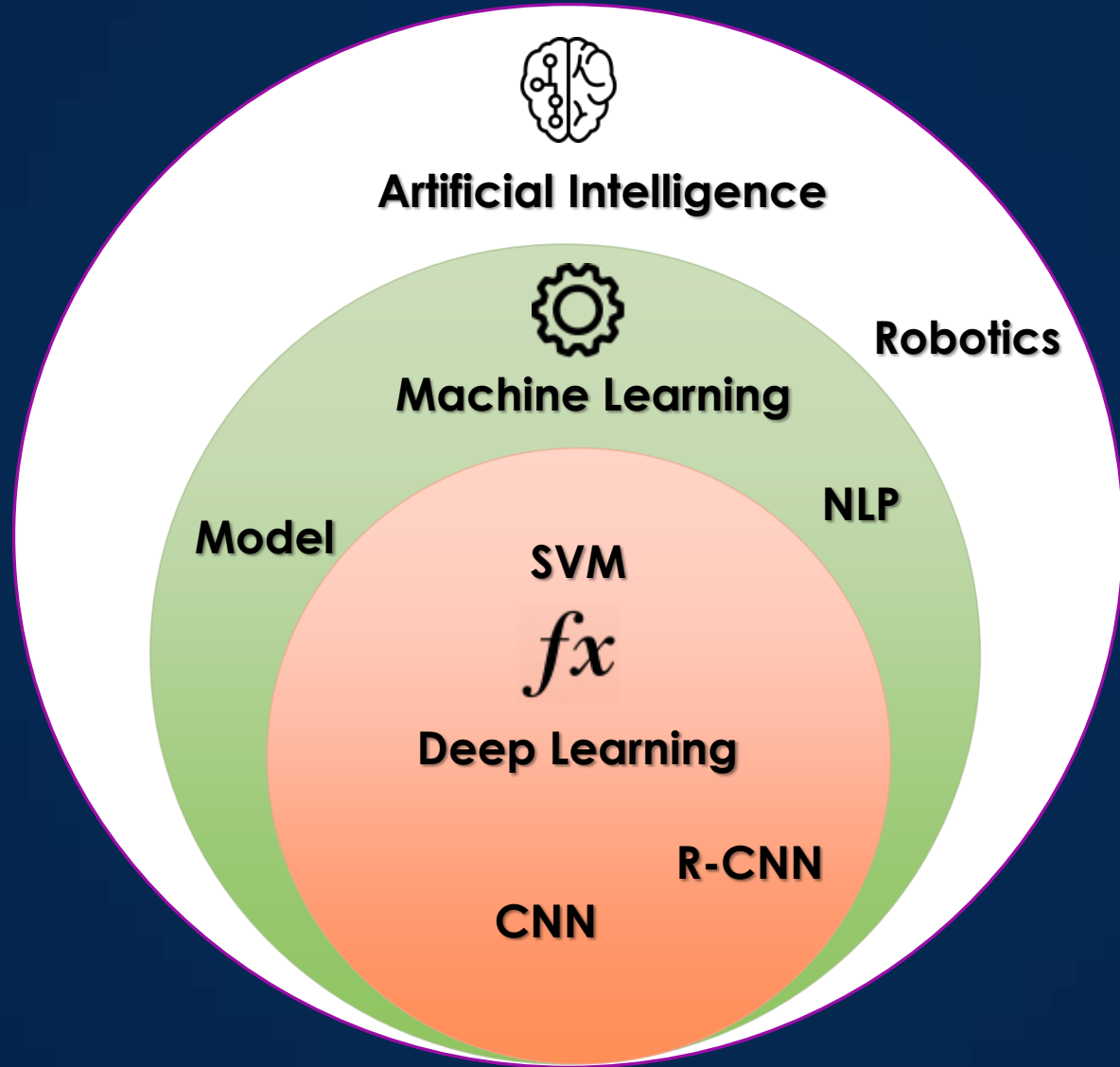
SVM

$f(x)$

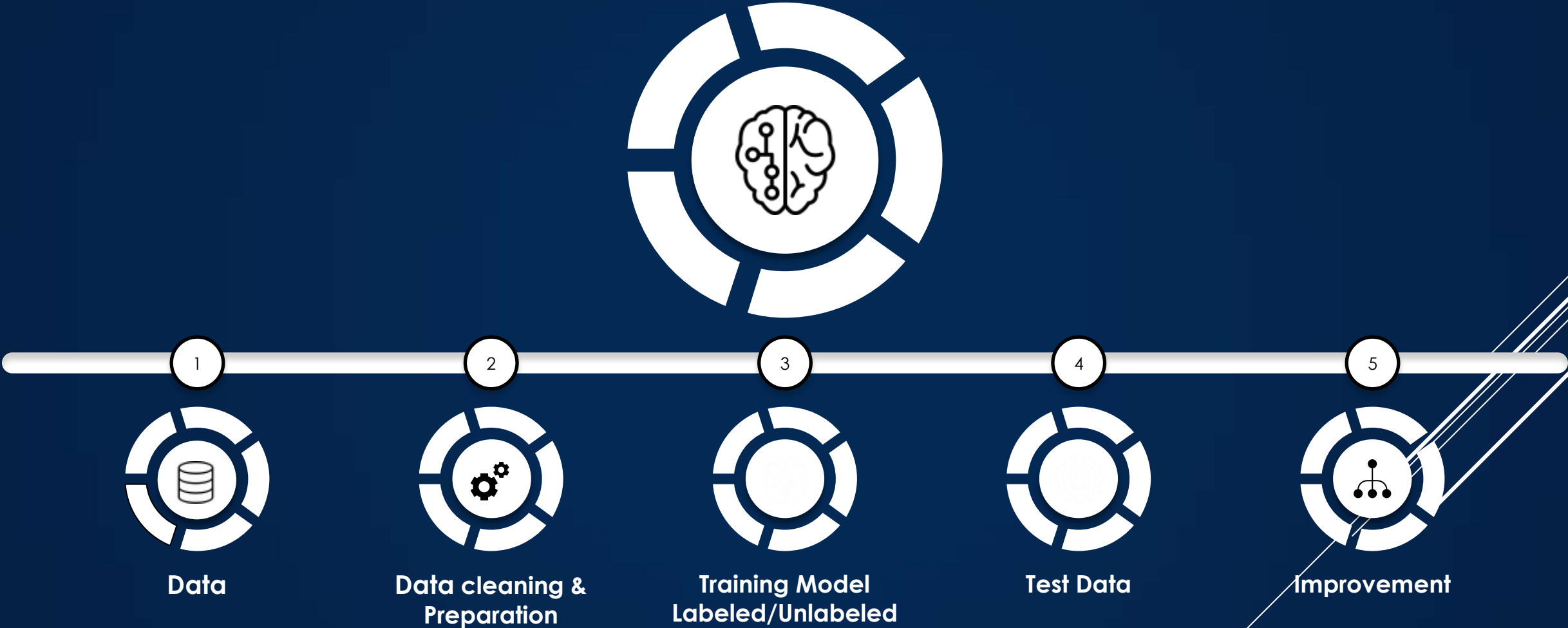
Deep Learning

R-CNN

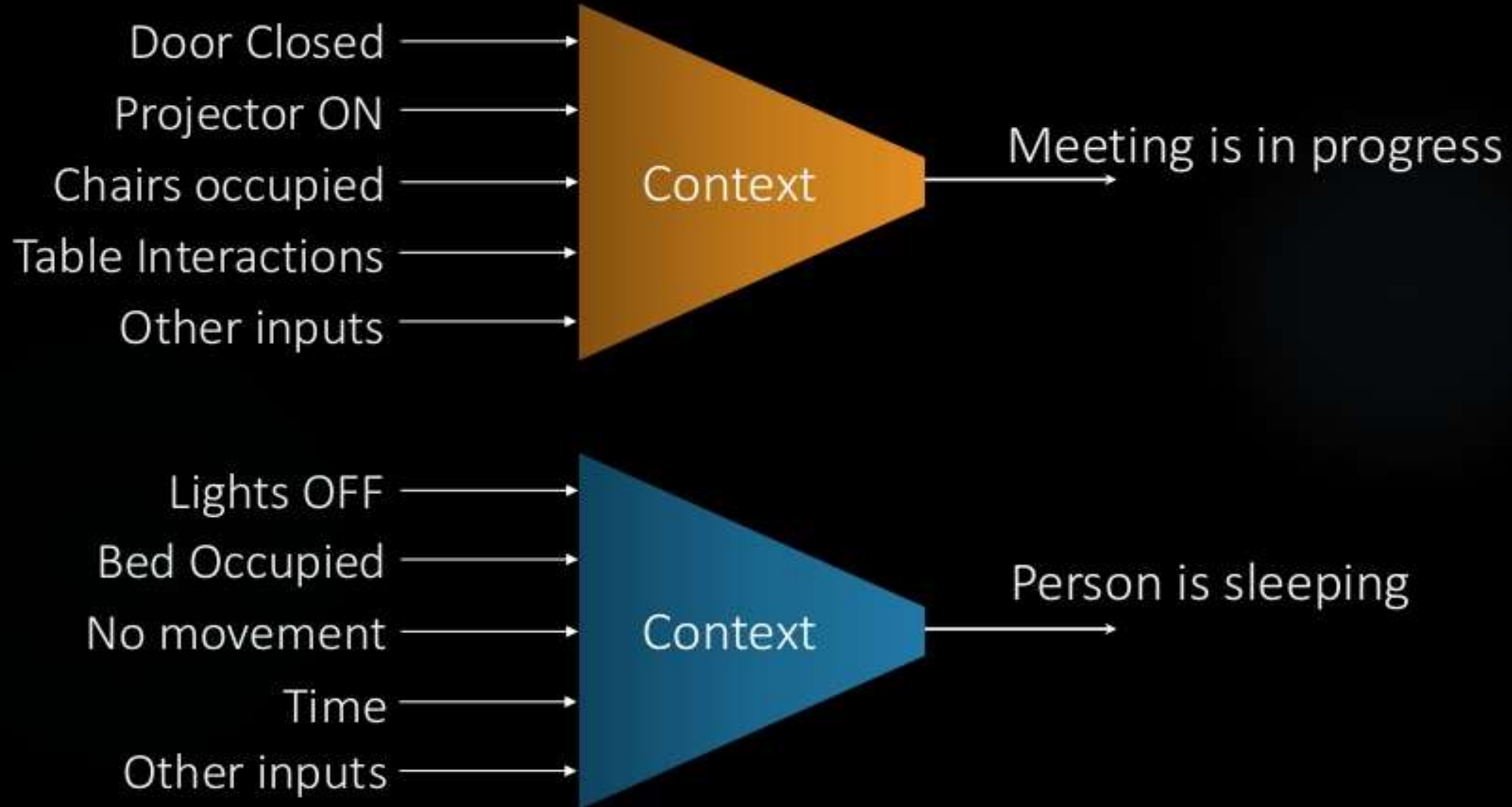
CNN



MACHINE LEARNING WORKFLOW FOR ANALYSIS

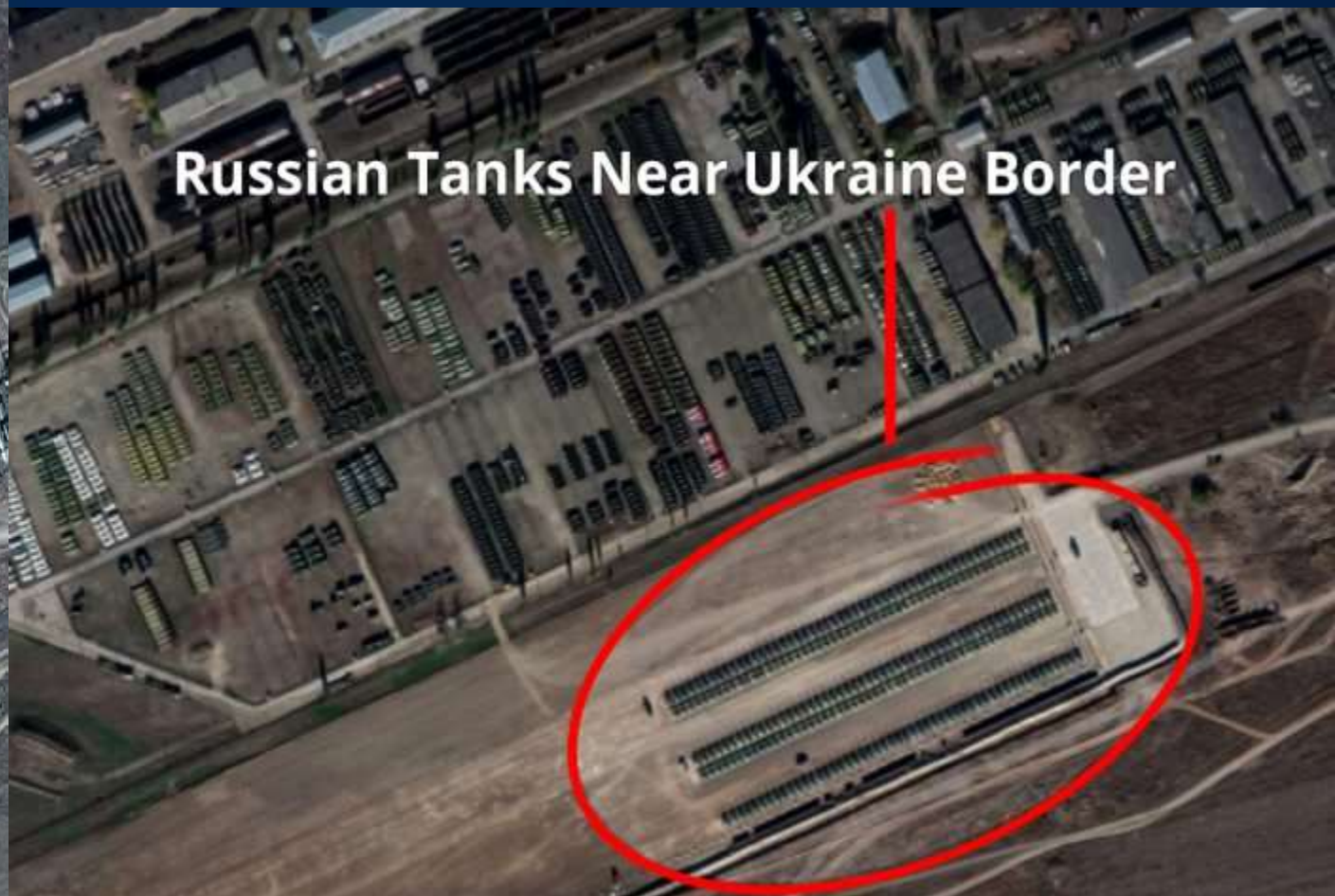


Building Context

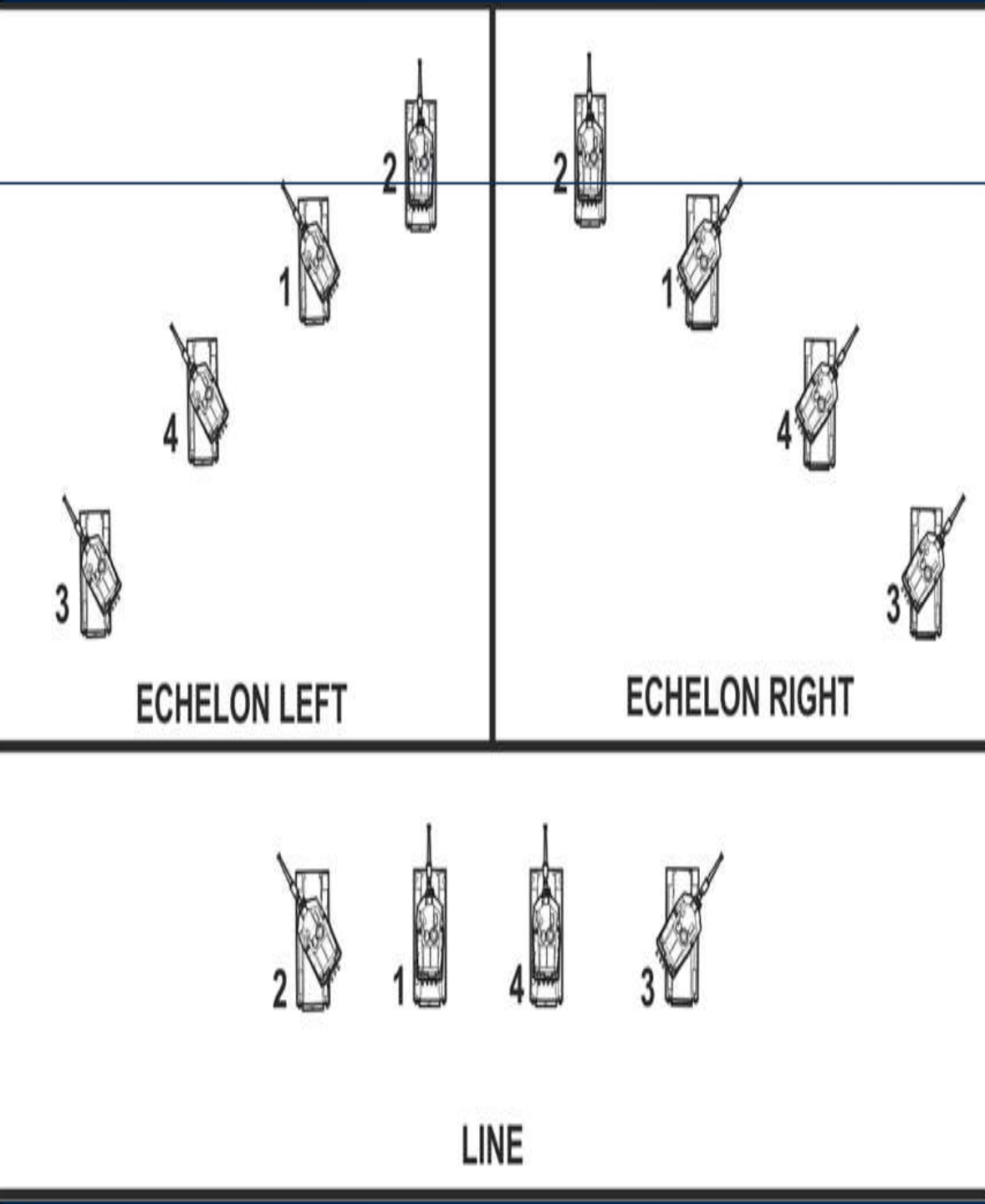




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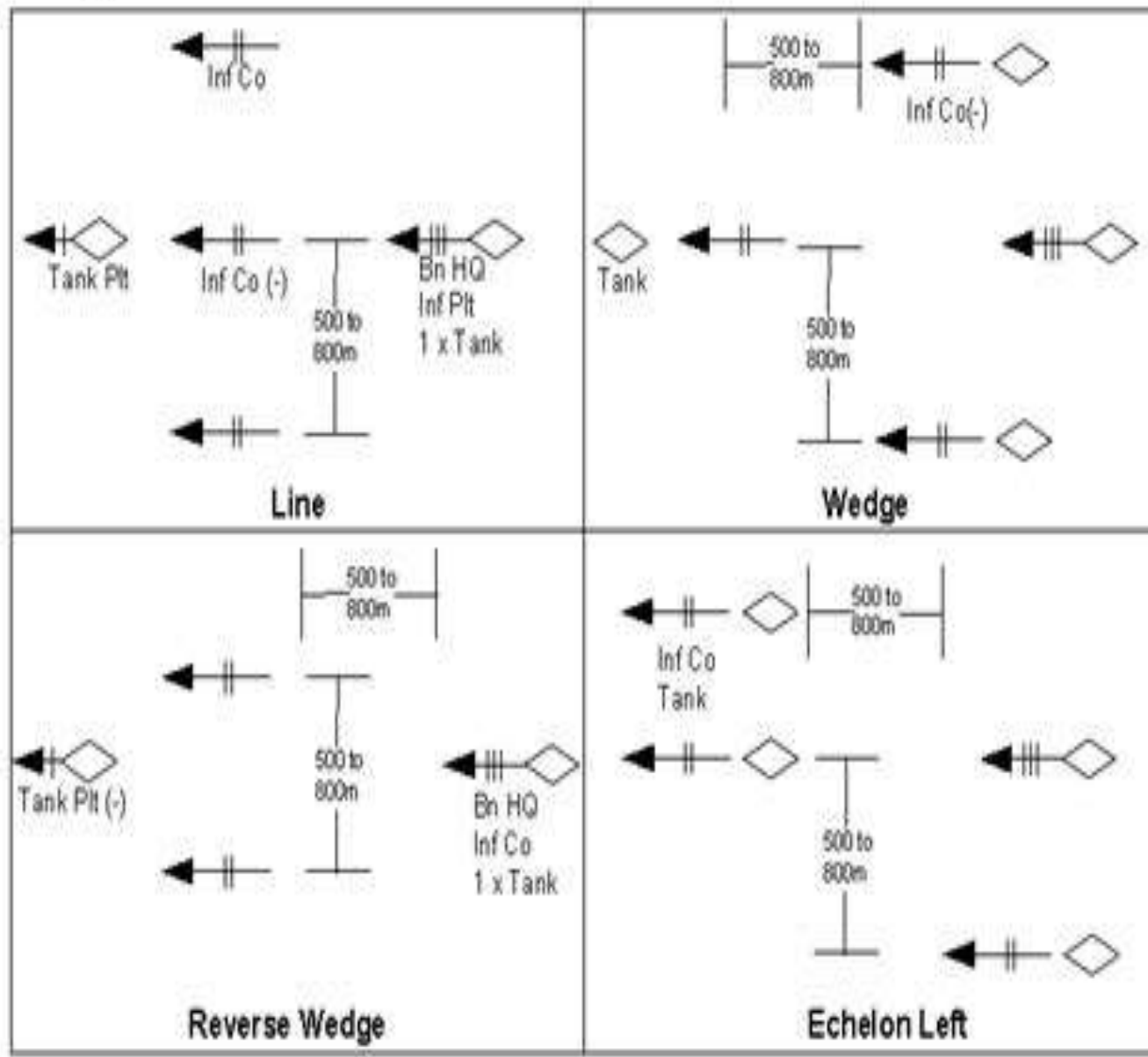


Russian Tanks Near Ukraine Border



Infantry Battalion Attack Formations

Figure 8



A stylized illustration of a person from behind, standing at a fork in a road. Two signs are mounted on a post in front of them: the top sign is green and points right, labeled 'CHANGE'; the bottom sign is blue and points left, labeled 'OLD WAYS'. The background shows rolling hills and a clear sky. The text 'KEY CHALLENGES' is overlaid in yellow, underlined, between the two signs.

KEY CHALLENGES

- ▶ Understanding the context:--- Use Cases
- ▶ Reasoning
- ▶ Data Quality



THANK YOU