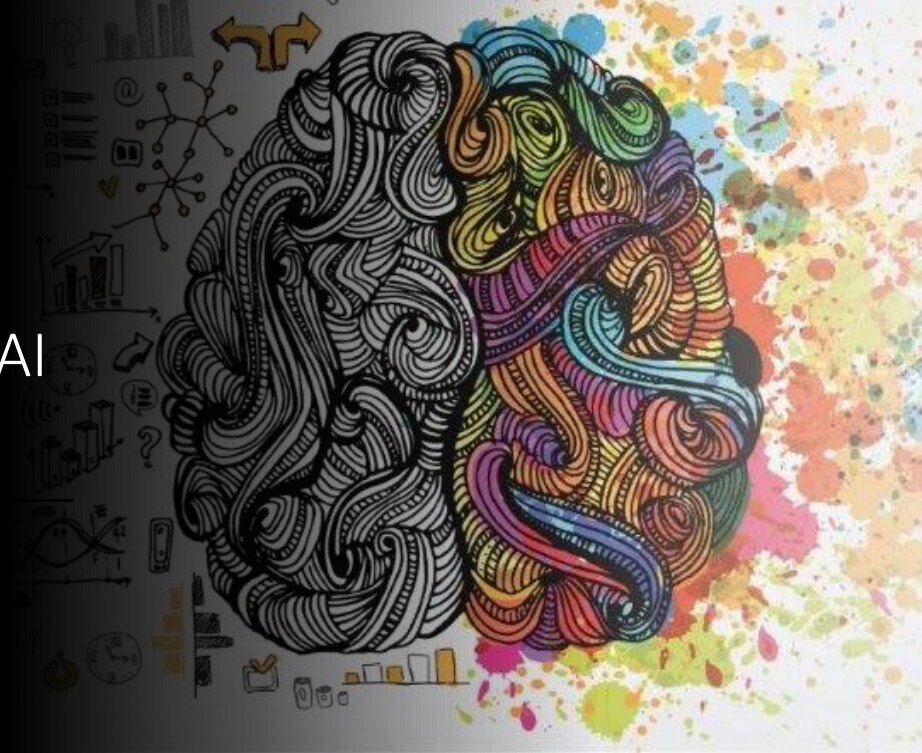# Leveraging Data in your AI Strategy

Data and information

Data

Raw, unorganized facts, figures, and records of voice/images/videos

Unprocessed, with no context; can exist in large, unfiltered volumes

Examples

Videos, images, sensor time-series readings, raw statistics, log files

Information

Data that has been processed and organized such that it has meaning

Processed, with context, insightful

Examples

A report summarizing the sales data for the past year, a weather forecast

Intelligence

Analytical: interpret information

Predictive: predict future events

Actionable: inform decisions and strategies.

Examples

Market intelligence, maintenance predictions, run-replace decisions, and strategic insights.

Human and Artificial Intelligence

Human intelligence
- IQ, EQ, HQ, BQ
- Ancestrally inherited, sensorialy tuned, experientially learnt, symbiotically received
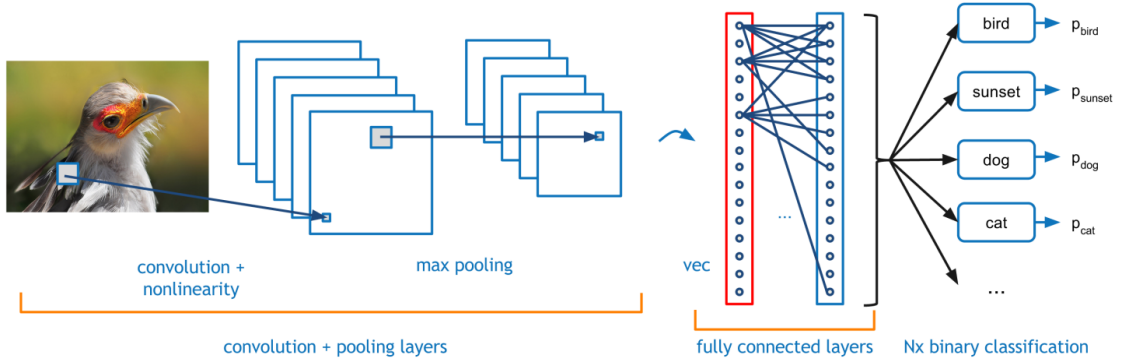
Artificial intelligence
- Codified rules vs. data queried vs. machine learnt
- Tree-based vs. fuzzy logic vs. similarity queries vs. deep learning
- Generically intelligent systems? Episodic memory? Emotion? Creativity?

Understanding Neural Networks
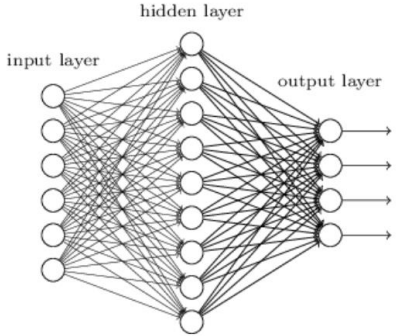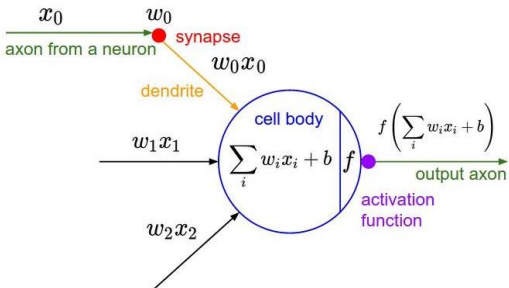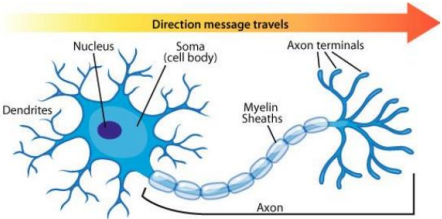
Understanding Deep Neural Networks

Applications

Today

- Multidimensional signal analysis and classification
- Pattern mapping
- Automation of analysis
- Rule implementation
- Pattern recognition, image analysis
- NLP
- Voice recognition
- Image recognition

Next…

- Video streaming, gaming
- Photorealistic smart chatbots, virtual actors, digital employees
- Health and wellness
- Automotive applications (driver behaviour)
- Agricultural spraying
- Legal process automation
- Adaptive learning
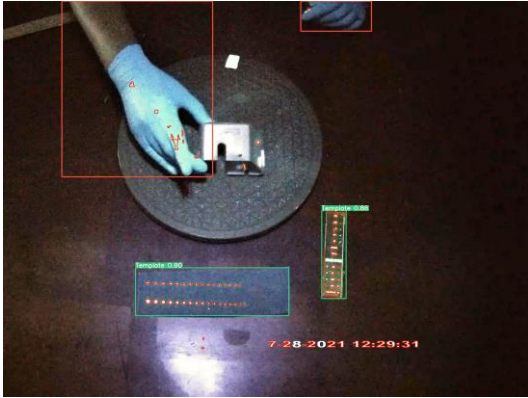
REAL-TIME OBJECT AND ANOMALY TAGGING IN VIDEO

SITUATIONALLY ENHANCED VIDEO

Creating an AI strategy

- What data do you have or can generate?
- What manual decisions/intelligence today take significant labor and time?
- Are there aspects of the intelligence that can be captured by voice, sound, image, or video?
- Are there multiple sensors that can be fused together to provide system level information: sensors at various frequencies or with different physics?
- Can we eliminate previous methods which can leverage the capabilities of AI?
- Is there an advantage to performing AI inferencing at the Edge vs. the Cloud

Biology

- Genomics; Microbiomics
- Transcriptomics
- Connectomics

Digital

- Deep Learning, GAN
- Social Computing
- Blockchain

Materials

- Graphene
- Metal-organic Frameworks
- Rare Earths
- Composites, Nano Materials
- Meta Materials, Superconductors

Energy Strategy

Manufacturing Strategy

Digital Strategy

Supply-chain Strategy

Emerging Need

- Near Zero Carbon Energy
- Wireless Power
- Eco-conscious Agricultural Productivity
- Long-range lightweight drones
- Predict and Prevent
- Augmented Reality; UGW
- Connected Things
- Virtual Presence

Current Need

- Affordable Renewable Energy
- Agricultural Productivity
- Accessible Water
- Predicting Natural Disasters
- Weaponized Drones
- Early Health
- Immersive Entertainment; UGC
- Connected Consumer
- Mobility

Geo-political Trends

- Pandemic
- Climate change
- Terrorism
- End of capitalism
- Oil prices
- Emerging markets

Consumer Trends

- Social distancing
- Premiumization
- Health & Wellness
- Greying population
- Women decision makers
- Rural needs

Creating the next age of innovation

Gopichand Katragadda

Founder and CEO, Myelin Foundry