Intelligent Automation Thesaurus

Intelligent Automation is a fast-evolving space and new terminology gets created everyday – AI, ML, NLP, NLG, Computer Vision, ICR/OCR, RPA, RDA, Assisted Bots, Unassisted Bots, Conversational AI – the list is long.

Here's our attempt to demystify the lingo !

Artificial Intelligence (AI): *The simulation of human intelligence processes by computer systems. In the context of automation, AI tools fall under a few broad categories: perception (the acquisition of unstructured information), cognition (rules for processing that information) and conversation (exchange of the information using an unstructured format)*

Assisted Automation: *RPA or Cognitive Bots that are triggered on a "as-needed" basis by human agents in order to help them complete their tasks more efficiently and/or accurately. These bots run on the same computer as the human agent and their typical uses cases are in the Front Office or Contact Centre of an enterprise. Assisted Automation is also known as Attended Automation or Remote Desktop Automation (RDA).*

**Attended Automation:** *See Assisted Automation.*

Business Process Management (BPM): *Methodologies and technologies that help orchestrate and streamline processes in the enterprise using a workflow-based approach. Enterprises should view BPM as a complimentary technology to intelligent automation using RPA, AI and ML tools.*

Chatbots: *Chatbots or Conversational AI refers to the use of messaging apps and speech-based assistants to automate the "human-machine conversation" in order to create hyper-personalised customer experience at scale. These applications leverage AI tools like NLP and Deep Learning to enable long-running, free-flow interactions with customers using natural language (text or voice).*

Cognitive Bots: *RPA technology that combines the ability to execute rule-based, repetitive tasks with AI or ML capabilities.*

Computer Vision: *One of the application areas of Machine Learning that uses image processing algorithms to interpret images or videos to extract content and context (representing a type of unstructured data).*

Conversational AI: *See Chatbots*
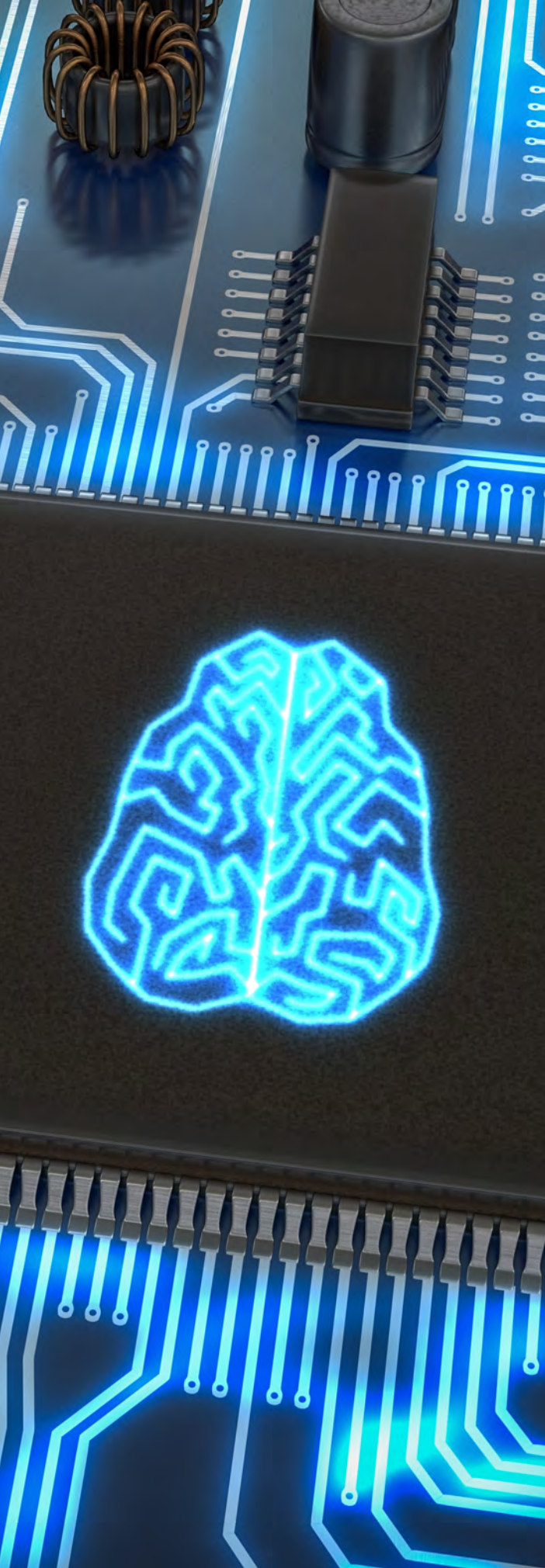
Deep Learning: *A technique for implementing Machine Learning in which the algorithms use "neural networks" (inspired by the information processing patterns found in the human brain). While traditional ML algorithms require the features to be used for data classification to be fed to it, DL algorithms can automatically discover them.*

Emotion AI: *Application area of AI focused on using tools such as NLP, text analytics and biometrics to identify and quantify the positive or negative sentiment in a customer interaction in order to provide an appropriate intervention.*

Intelligent Character Recognition (ICR) *An extended and more-specific technology within OCR that can extract information from hand-written documents as against printed characters. Like OCR, this is a key technology area that complements the RPA and AI tools by providing them with the data to work with.*

Intent Analysis: *Application area of AI focused on using NLP, text analytics and Deep Learning in order to determine propensity of a customer to engage and convert and achieve a desired business outcome. This technique is often used in conjunction with Emotion AI or Sentiment Analysis to drive prospects through a customer journey.*

Machine Learning: *ML is a specific area of AI that focuses on getting a computer to act without programming by looking for patterns. The broad categories of ML are supervised learning (where data sets are labeled so that patterns can be detected and used to label new data sets), unsupervised learning (where data sets are not labelled but instead sorted according to similarities and differences) and reinforced learning (where data sets are not labeled and learning happens by the feedback based on the actions performed).*

Natural Language Processing (NLP) *The processing of information in human (and not computer) language by a computer program. NLP use cases in the context of automation include voice-to-text conversion, text translation, sentiment analysis and intent analysis. NLP is the summation of NLU and NLG and is key to facilitating the "human-machine conversation.*

Natural Language Generation (NLG): *NLG is a subtopic of NLP focused on converting structured data into human understandable formats like text and voice.*

Natural Language Understanding (NLU): *NLU is a subtopic of NLP focused on the the machine's comprehension capabilities of human inputs like text and voice and converting it into structured data. Most common examples of NLU are Siri, Alexa and Google Assistant.*

Robotic Desktop Automation (RDA): *See Assisted Automation.*

Sentiment Analysis: *See Emotion AI.*

Unassisted Automation: *RPA or Cognitive Bots that are run in batch mode to carry our high-volume, repetitive tasks without having to be trigged by a human agent. Typical use cases for Unassisted Automation are in the Back Office. These bots typically run on a server and not on the same computer as a human agent.*

Unattended Automation: *See Unassisted Automation.*

Unstructured Data: *Unstructured data is information that is not specifically structured to be easily understood by machines. The most common format of unstructured data is text, but it could have other formats including images, video, audio or social media data.*