

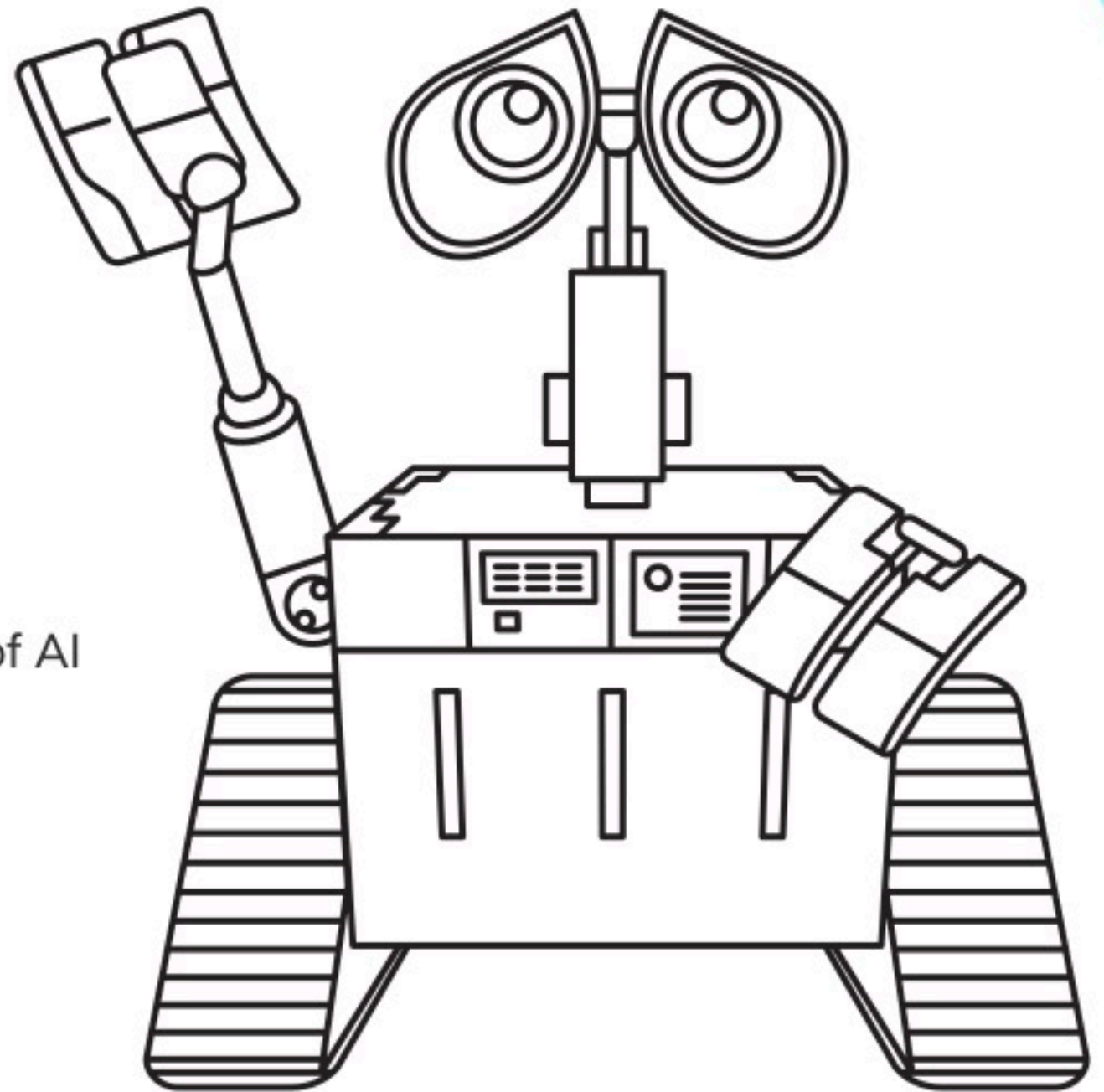


**ASI**  
Technology Advisors

# Contact Center AI

Explained by Pop Culture

Demystify how AI works in the contact center with help from iconic examples of AI



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# What is artificial intelligence?

# What is artificial intelligence?

This buzzy term is ubiquitously used as a descriptor for a broad application of various technology and functions.

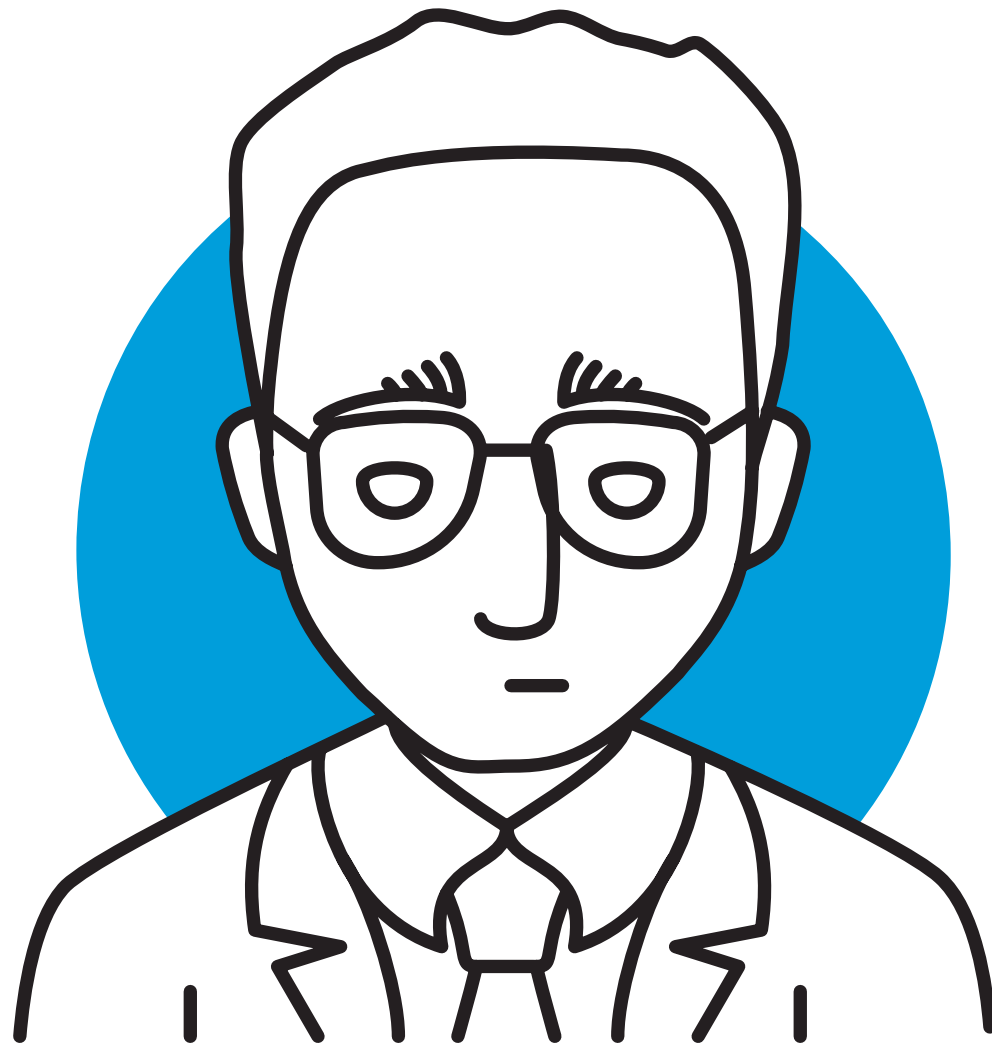
Much so, that what it encompasses and how it works are as comprehensible as the marketing gobbledegook used to sell it.

Sure, you might understand the benefits of AI.

You're probably aware of a few of the common contact center AI use cases.

Maybe you're already using AI technology.

**But...What do you really know about AI—like, *really*?**



**Can you define  
the meaning of AI?**

**Can you explain  
how it works?**

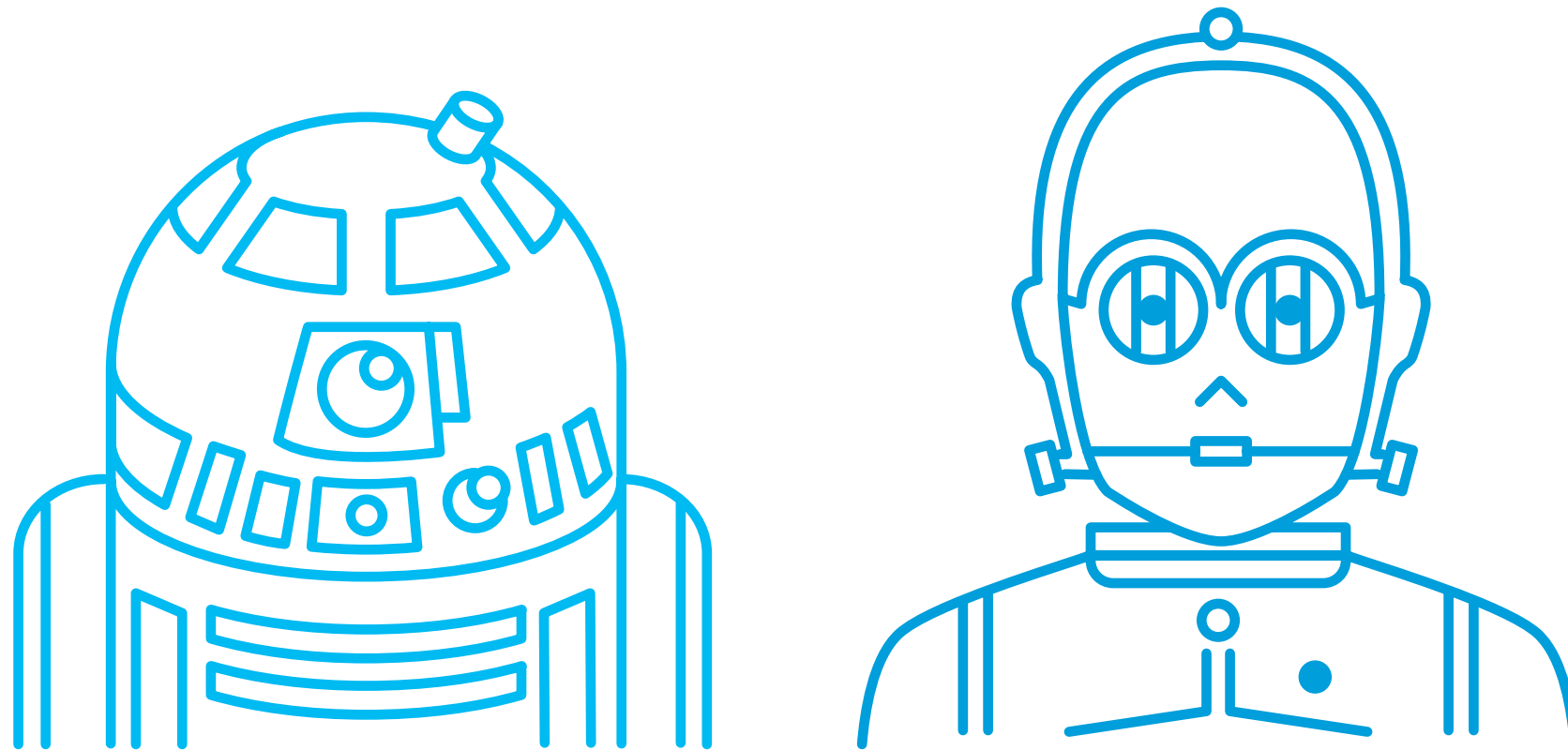
**Can any  
average person?**

**Bueller?**

If you recognized that this economics teacher is not a bot, you'd probably excel at "Spot the Bot," quiz.

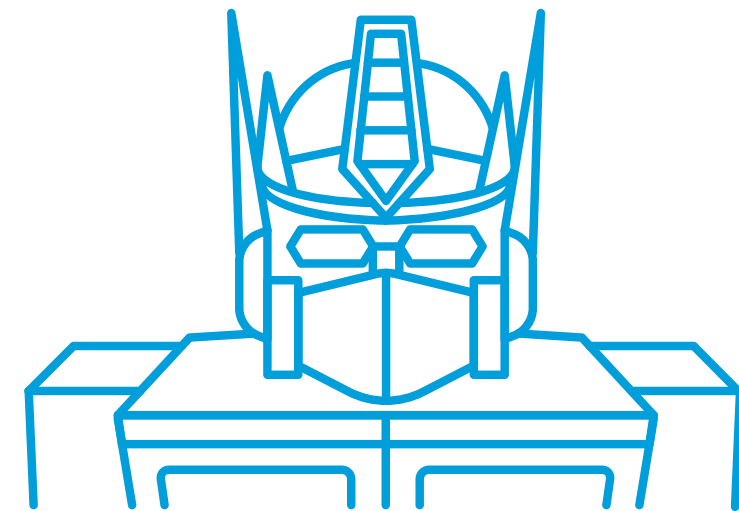
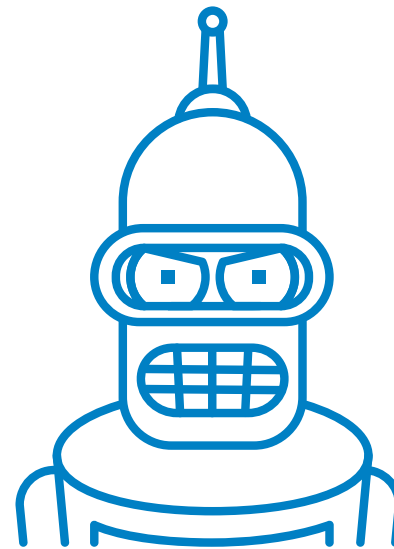
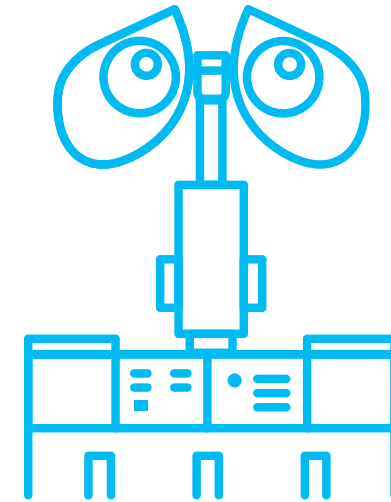
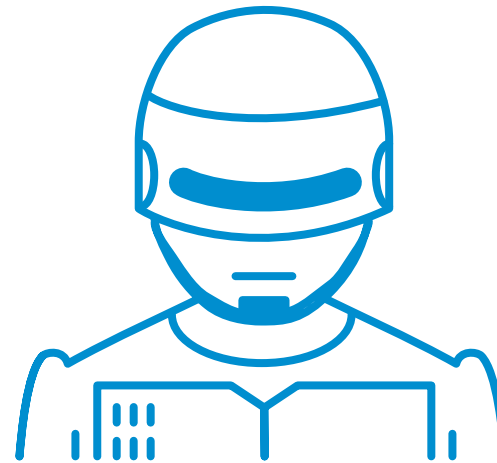
**Take it now!**

**If you're an average Joe like most of us, your familiarity with AI is probably along these lines:**

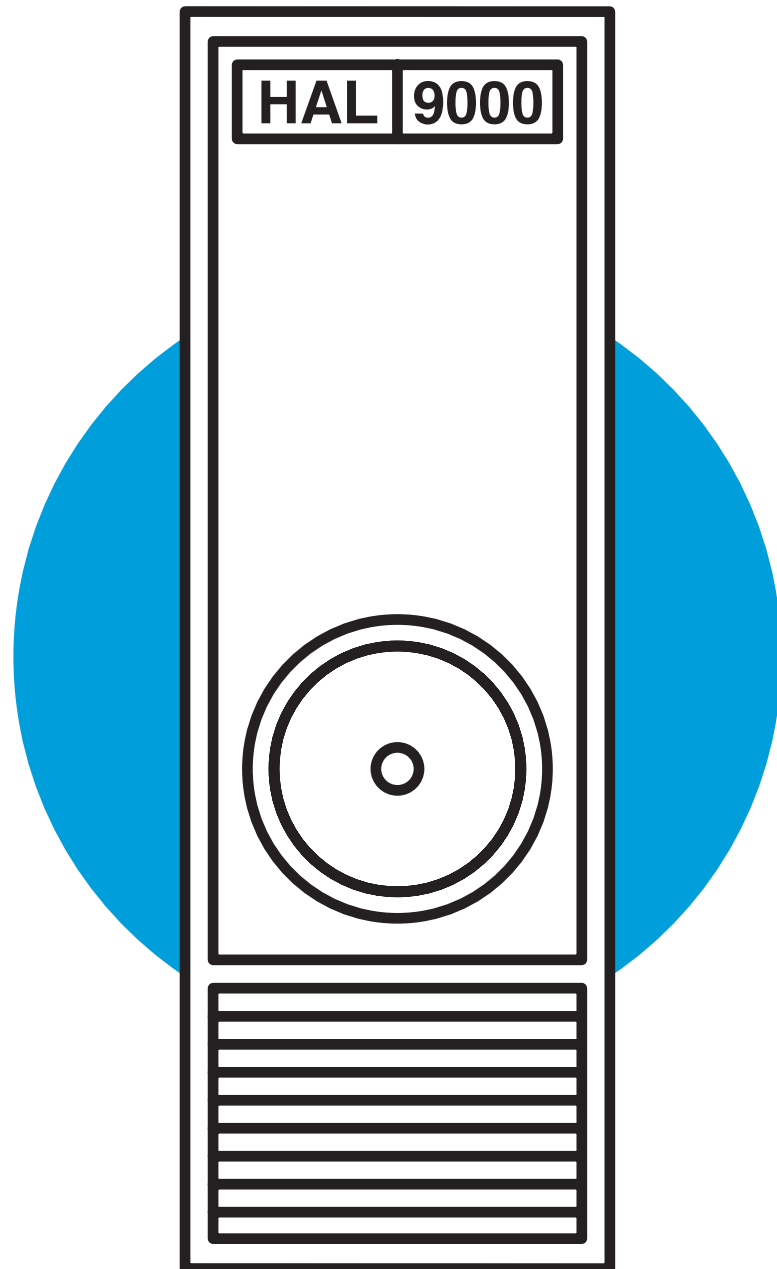


## Or maybe these...

Identifying on-screen AI is a much more relatable skill than being able to define or classify how AI functions.







*“Any sufficiently advanced technology is indistinguishable from magic” — Arthur C. Clarke, Author of “2001: A Space Odyssey”*

Fortunately, distinguishing the technology from magic and increasing your AI fluency doesn't have to mean navigating complex mathematics or computing.

Learning the “magic” can be as engaging as the movies.

With the help of AI icons and pop culture examples, you can get smarter about contact center AI.

And contrary to what HAL might imply, learning AI is completely harmless.



**“Come with me if you want to...”**  
**learn everything about [contact center AI](#).**

Perhaps you are the rare breed that can comprehensively compute the meaning of AI. But just how far does your nerdism prevail?

See if you can name every pop culture reference in this book, and you might even learn a thing or two along the way.

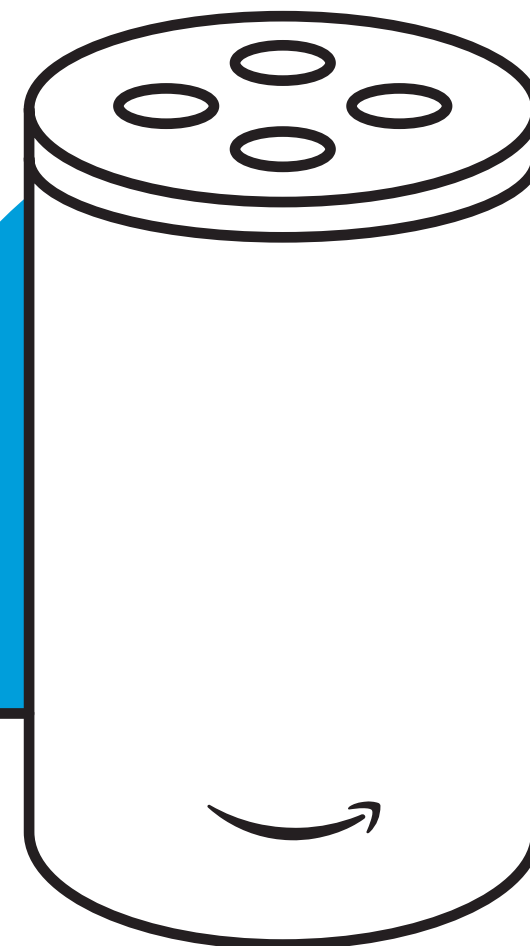


**Find a directory of all the featured bots on [page 58](#) in case you get stumped.**

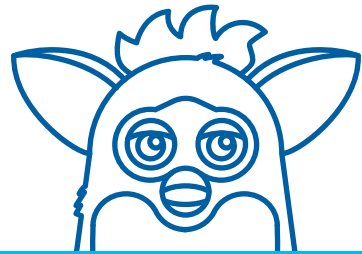
# So, what exactly is AI?

Just ask the most popular AI we know—Alexa, Siri and Google.

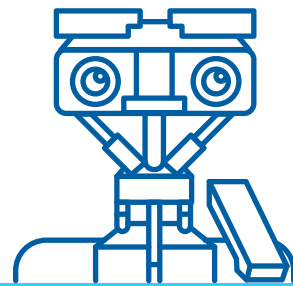
Artificial Intelligence is a field of computer science where programs or machines demonstrate humanlike intelligence or perform tasks that mimic human behavior.



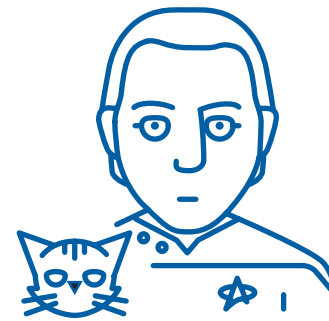
## Artificial intelligence can:



Follow Rules

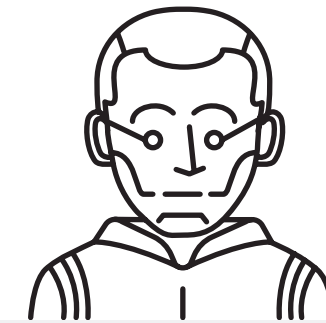


Understand and Talk Conversationally



Learn

## AI can't:



Feel

Simple



Sophisticated

Fiction

Hollywood AI is glamorized and isn't always an accurate portrayal. For instance, AI isn't self-aware or fully sentient, where it knows of its existence and can feel human emotions. However, AI in real life can follow rules, talk conversationally, understand, and learn. And like on-screen representations, AI technology varies in complexity based on how it's programmed, ranging from simple to extremely sophisticated:



**Star Trek's character Data commands Starship Enterprise, but he notably becomes a cat-dad when he adopts a cat in efforts to make him appear more human.**

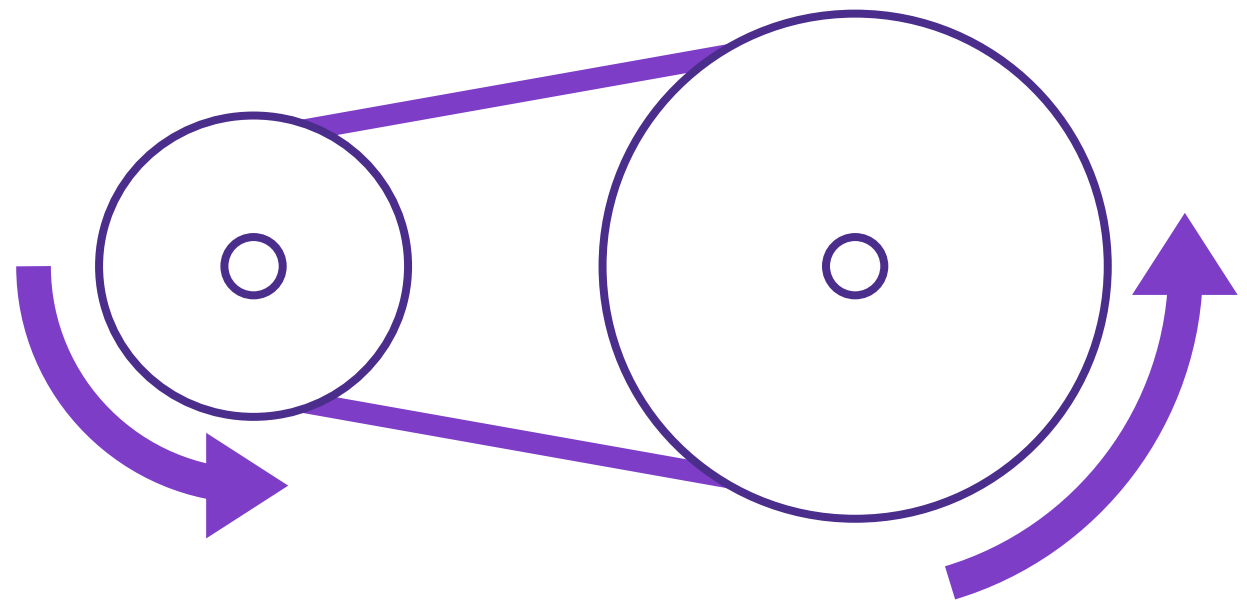
# **Automation plays by the rules**

# Automation plays by **the rules**

Before there were even computers, humans sought ways to make our lives easier and more efficient. Wheels, pulley-systems, and mechanical clocks are all examples of early automation—the precursor to AI. It's the simplest form of mimicking human intelligence.

**Automation** is using machines or computers to perform the repetitive tasks a human typically performs.

With programmed automation, humans manually configure logic based on pre-determined responses for conditions or triggers. Typically, this consists of “If/then” statements: If X, then Y.

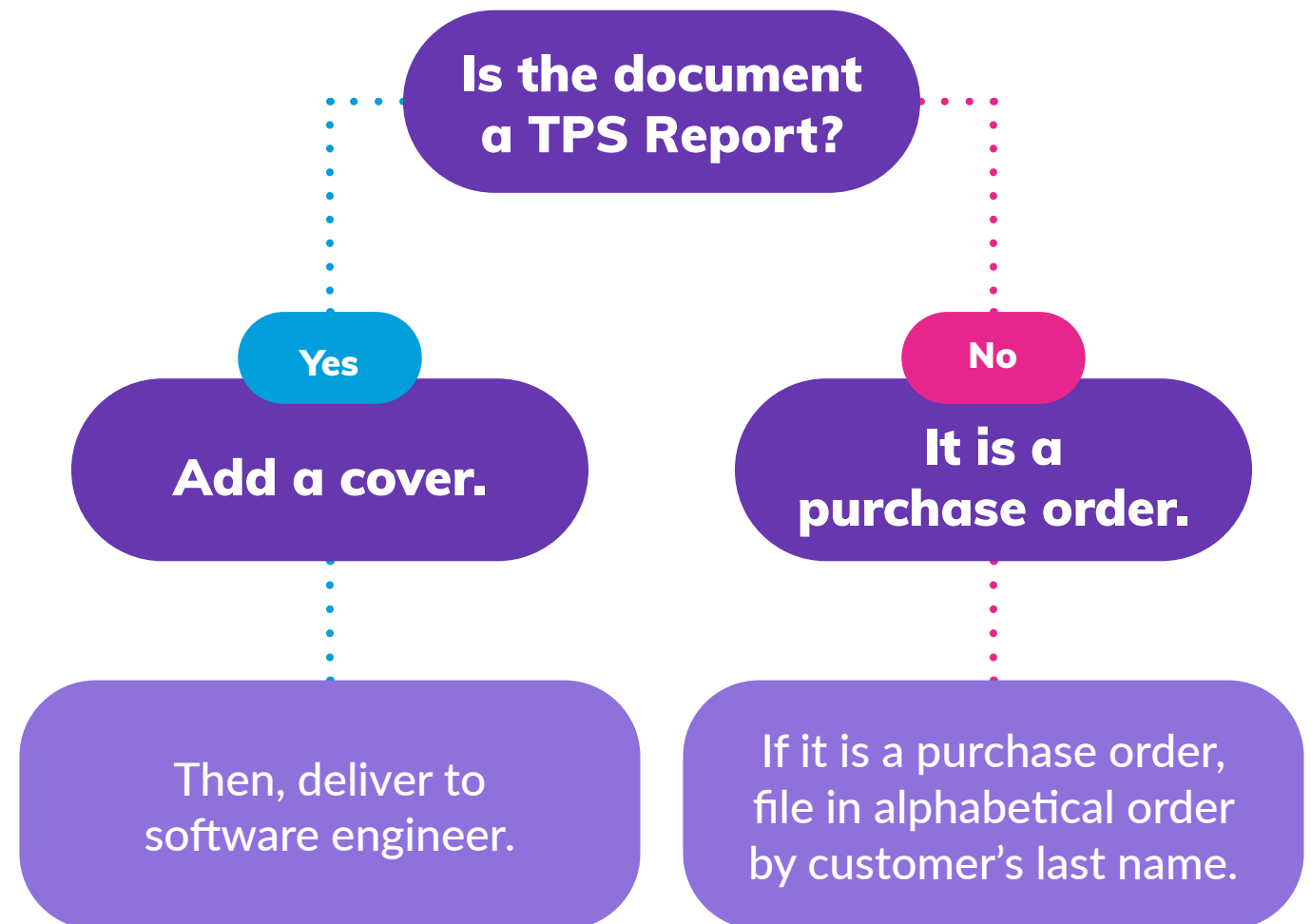


# Robotic process automation (RPA)

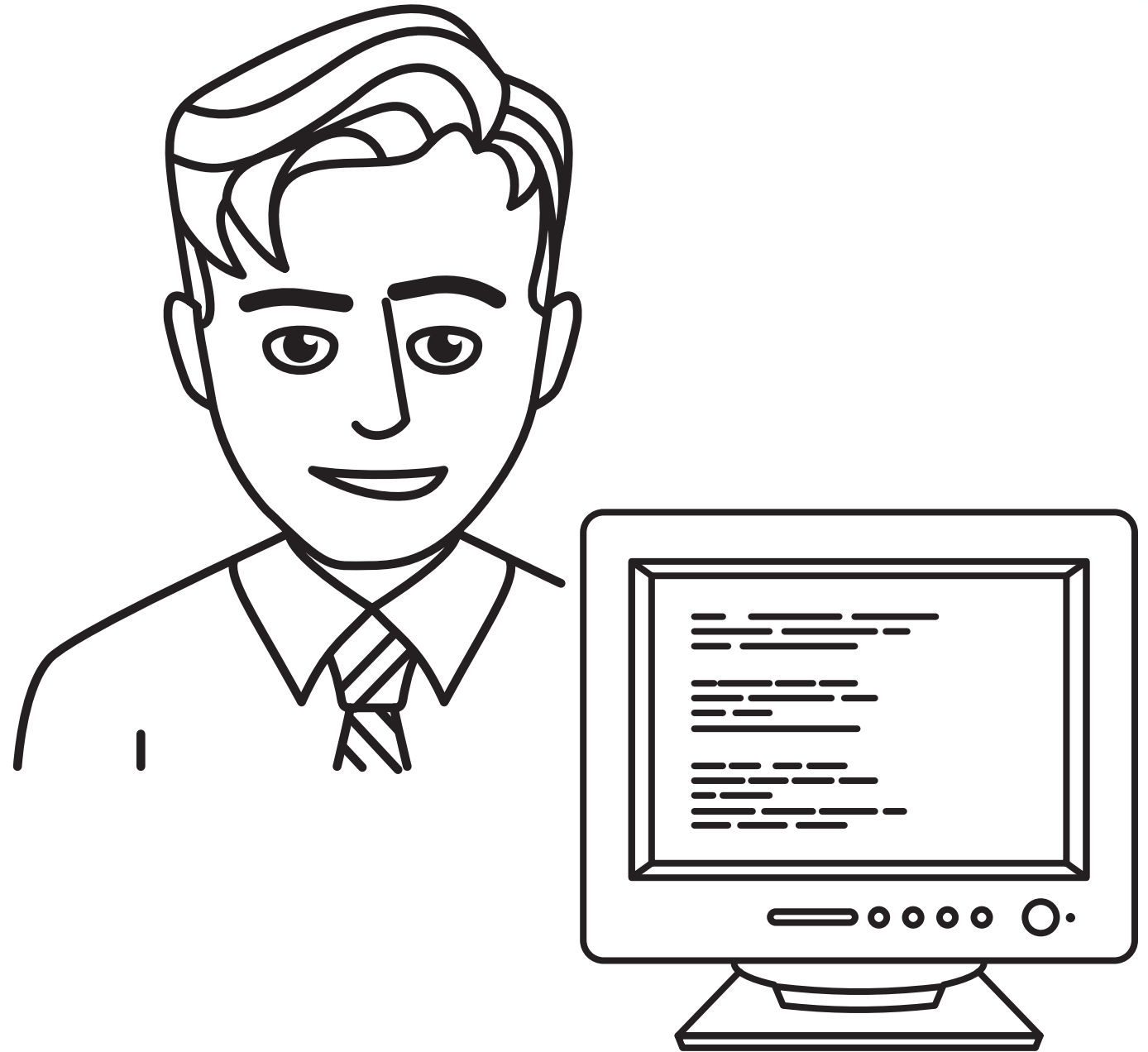
Robotic process automation (RPA) is an example of automation, where humans create or use computer programs to perform repetitive human tasks. They can do this using rules or decision trees and take action through scripted responses.

RPA can often perform repetitive tasks more quickly than humans and is less prone to errors, which means:

**RPA will deliver those TPS reports sooner than ASAP.**

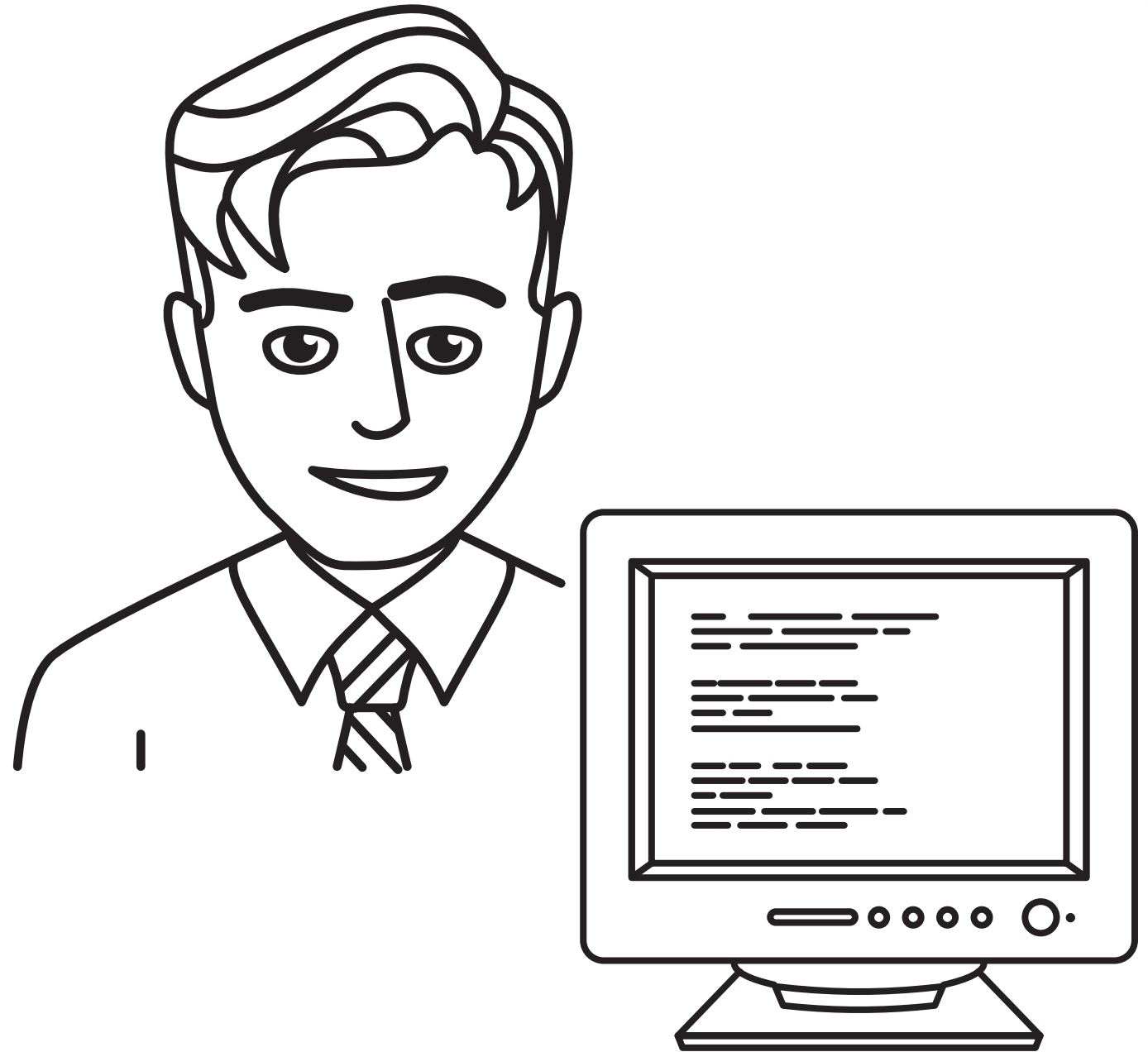


In fact, if RPA were prevalent in 1999, then “Office Space” wouldn’t exist.



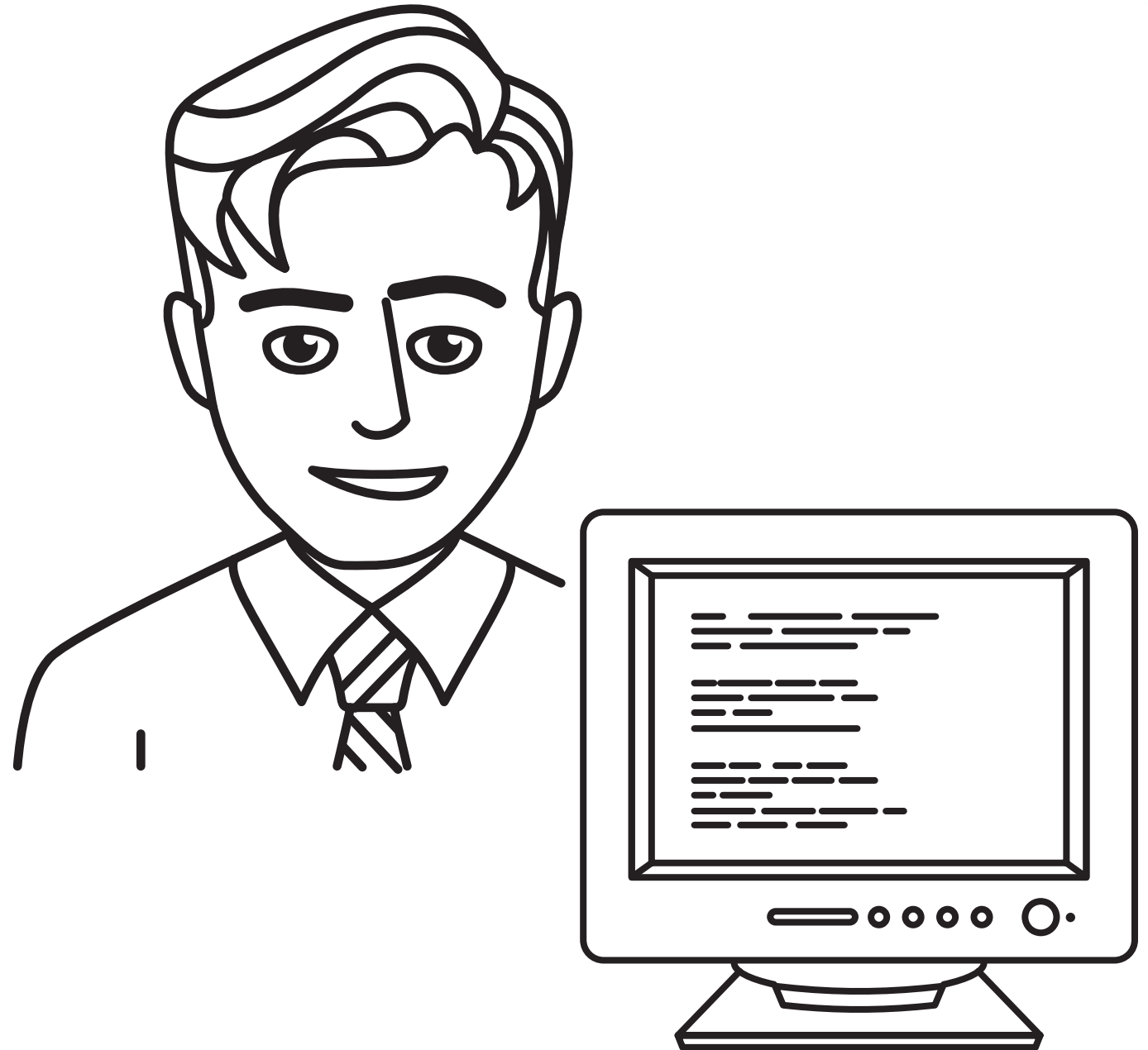


The entire plot of **“Office Space”** centers around soul-sucking monotonous work that makes work stink. In fact, writer Mike Judge wrote the 90’s-era satire to highlight the absurdity of routine office work after spending hours alphabetizing purchase orders as a temp.



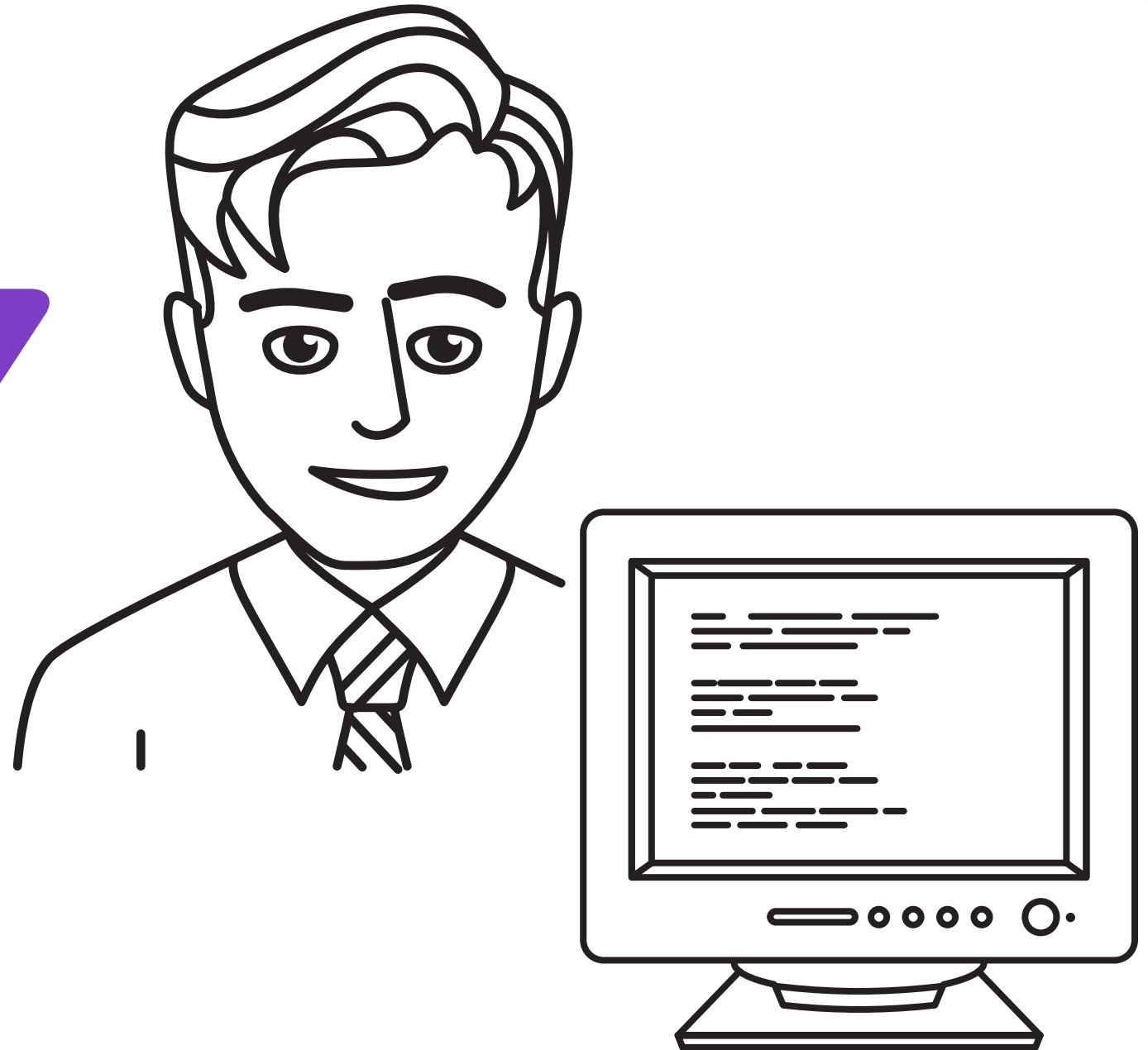
“Office Space” exemplifies the kind of work that could easily be automated and standardized using rules-based robotic process automation:

- If TPS report, autofill with customer data and add a new cover
- If customer sends specifications, then update information and route to software engineer queue
- If HR changes an employee status, then alert the accounting department



It's within the plot's farce that we better understand the benefits of automation: RPA unchains human efficiency, freeing employees to focus on more engaging, complex and satisfying work.

*“Human beings were not meant to sit in little cubicles staring at computer screens all day, filling out useless forms and listening to eight different bosses drone on about mission statements.” —Peter Gibbons, as played by Ron Livingston in “Office Space”*



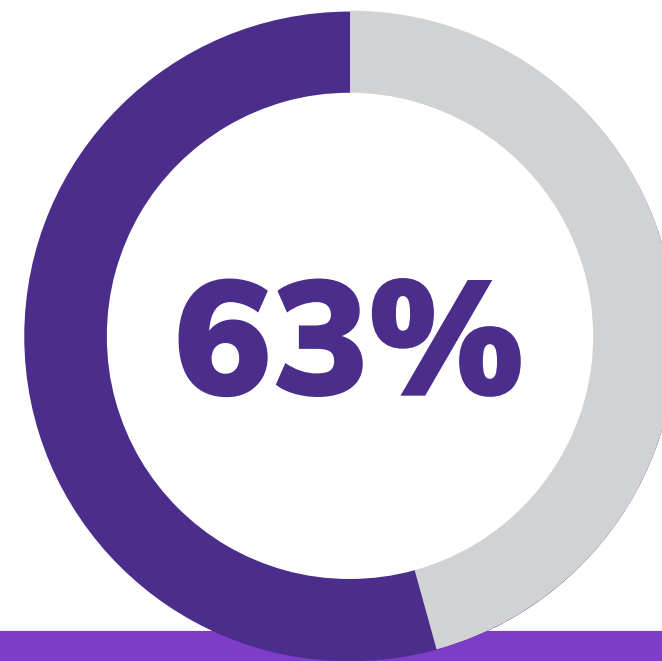
## #IRL: Robotic process automation

In contact centers, **RPAs** can automate most after-contact agent work and intraday supervisor activities. They can integrate data, applications, and workflow from automating mouse clicks to filling in fields.

### There are two types of RPA:

**Unattended**—Automated to circulate through a queue of tasks like processing claims or generating invoices.

**Attended**—Where RPA is initiated during a customer interaction to help agents complete forms or access the right knowledge base article.



of contact centers currently use  
or are planning to use RPA<sup>1</sup>

## Rules-based or decision tree chatbots

Another example of rules-based coding is the programming behind Hasbro's original 1998 animatronic interactive toy, Furby.

The robotic toy has an internal processor that runs code consisting of rules, where if the user condition is met, then the robotic performs an action.

**If Furby light sensors detect light, then it says, "Me up" and opens its eyes**

**If the Furby is held upside down, then it says, "Me scared"**

**If the Furby is pet, then it purrs;  
If its stomach is tickled, then it giggles.**



## Rules-based or decision tree chatbots

Where Furby fooled most people, is that even though it was marketed as a toy capable of learning English — *It didn't really learn.*

Furby's learning and understanding were all pre-programmed.

Furby had a fixed vocabulary of up to 42 English words, but right out of the packaging only spoke "Furbish." Within its coding was a formula that indicated groups of words to release based on the number of times the user turned on the toy.

Although to the user it appeared the toy learned new vocabulary over time, it already knew the words to begin with. It's coding emulated learning but the Furby wasn't actually learning or using AI.

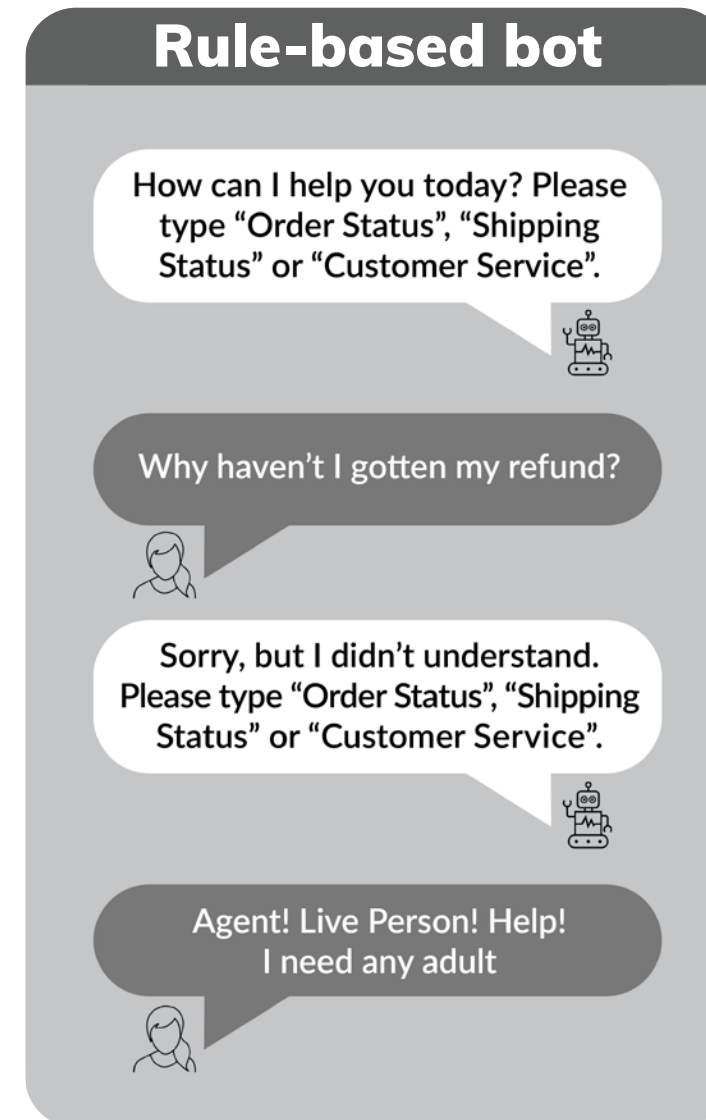


## #IRL: Menu/button chatbots

The simplest form of chatbots, menu/button-based chatbots are like Furby. They use rule-based programming or decision trees to automate tasks for customers like ordering, answering frequently asked questions, or routing contacts to the right agents.

Using “if/then” rules to define preset options like buttons and quick replies, these bots can receive inputs and respond to customers, but they can’t understand them or reply outside of their programmed commands.

To make a chatbot respond outside of these commands, it requires blending automation with AI technologies.





## #IRL: Menu/button chatbots

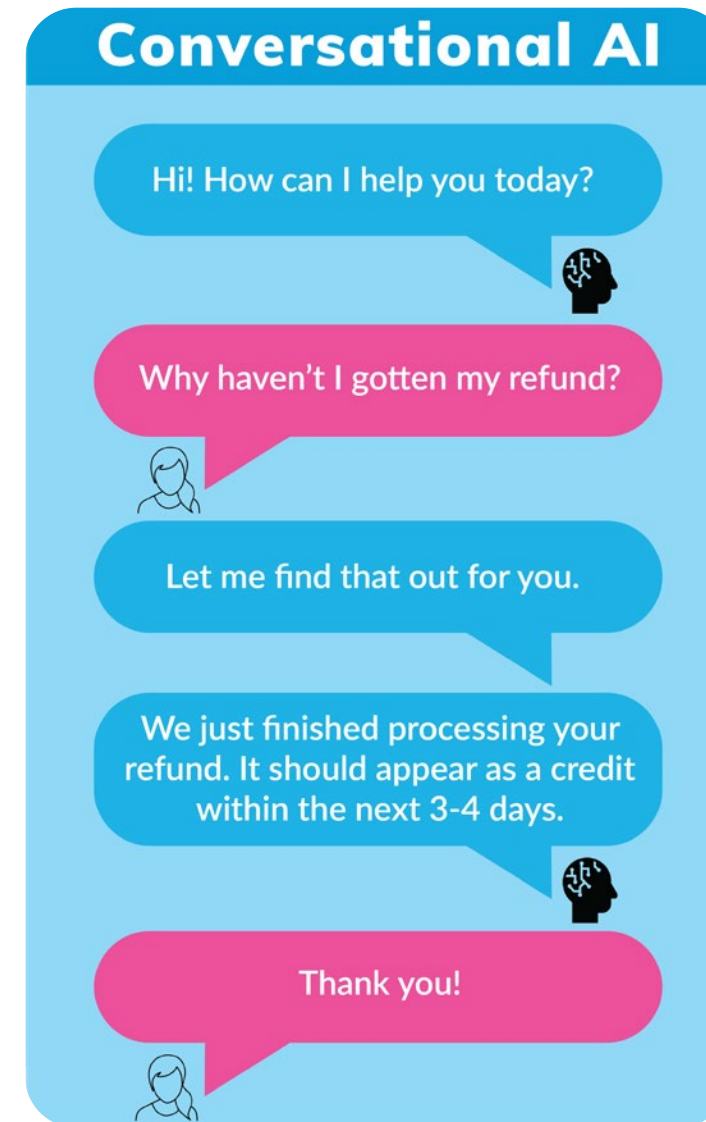
By extending the rules-based capabilities to include AI, chatbots can respond conversationally using **natural language processing** or machine learning. Smarter bots increase the possibilities for effective outcomes.

### Rules-based automation offers quick benefits for the right tasks:

- High volume of repetitive tasks
- Tasks have few or fixed outcomes
- Tasks prone to human error
- Lower volumes of data
- Faster to train and implement

### But it has its limitations

- Needs human intervention to update logic
- Must be able to pass off to a human when it can't provide answer or solution
- Difficult to maintain over time



**Both automation and artificial intelligence are designed to fulfill specific tasks and functions that emulate humans. Some AI scientists argue AI requires learning, and don't consider automation to be AI.**

## **Automation**

- Pre-defined and can't react to new situations
- Collects and assembles data

## **Artificial Intelligence**

- Can learn, predict and make decisions
- Interprets and understands data

**AI can talk  
conversationally  
with natural  
language  
processing**

# AI can talk conversationally with natural language processing

AI requires patterns and logic, but human communication isn't logical—there's many ways language is ambiguous. Just take these two examples:

- Time flies like an arrow. Fruit flies like a banana.
- Performers recite a play, yet play at a recital.

**Natural language processing (NLP)** is a field of linguistic-based computer science that uses AI technology to help make language logical. NLP helps computers process and analyze text and speech, and to respond accurately and naturally. NLP breaks text into pieces and processes it to identify and tag attributes, such as signifying keywords, categories, or sentiment. You can think of it as the function that helps computers “read” text.

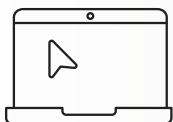
## **NLP has two sub-fields that correspond:**

- **Natural language understanding**
  - » What helps computers interpret or understand
- **Natural language generation**
  - » What helps computers write

## #IRL: NLP use cases

NLP is one of the most useful AI technologies in the contact center. It often works in-tandem with other AI technologies, like machine learning and automated speech recognition, to automate reporting and surface trends in real-time.

- **Provide analysis of contacts and surface across-channel trends** such as:
  - » Trending topics and issues
  - » Sentiment and root cause of customer frustration
  - » Desirable and undesirable agent behaviors
  - » Upsell or cross-sell opportunities
- **Smarter routing:** Use topics or sentiment to predict the best agent match based on the agent's skills
- **Improve agent experience with (AI) supervisor co-pilot:**
  - » Identify coaching opportunities
  - » Ensure compliance and minimize risk
  - » Alert supervisor or escalate interactions
  - » **Help agent** with guidance on next action to take in real time

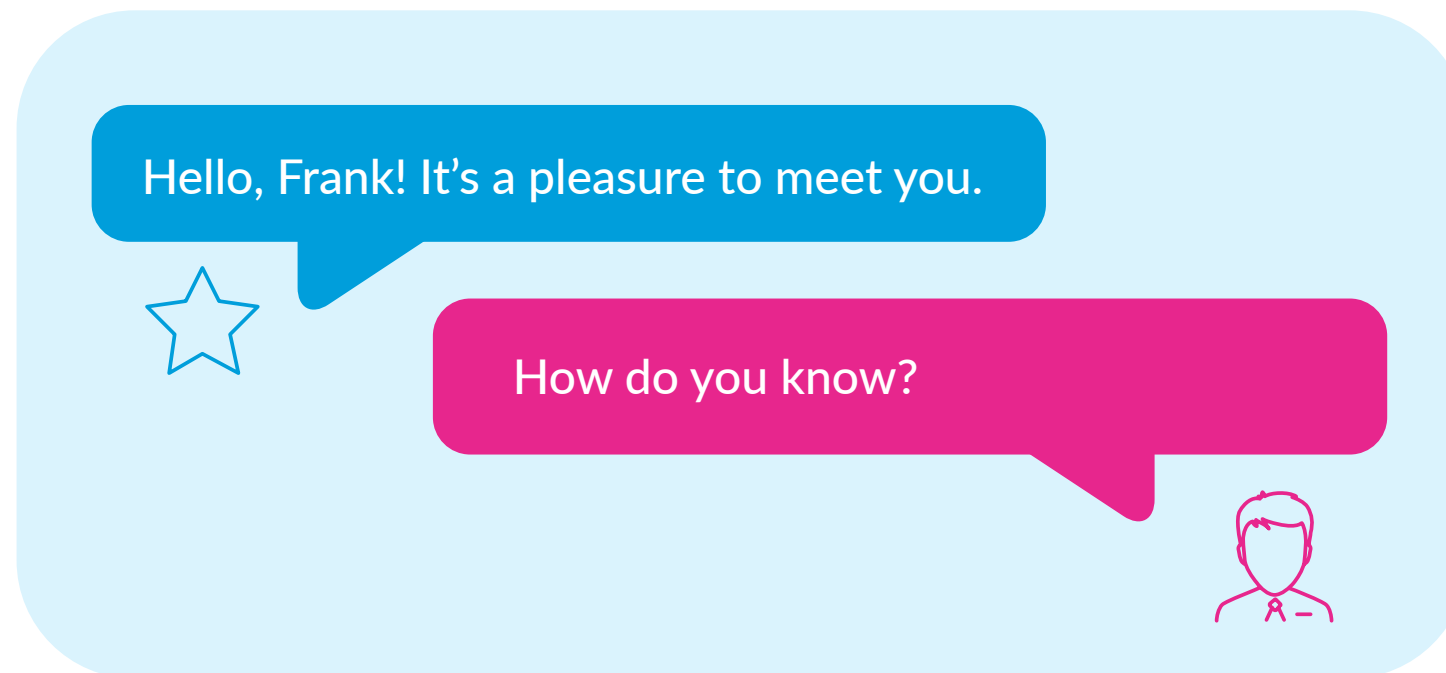


To find what use case might be right for your contact center, **check out this self-guided assessment tool.**

# Natural language understanding interprets

**Natural language understanding (NLU)** is the function of NLP that interprets language. It is the process of turning unstructured text and speech into structured data to help understand intent and context.

Let's take this dialogue from the movie "Robot & Frank" as an example. In this scene, Frank is a cantankerous aging man whose adult children buy him a caretaking robot in lieu of full-time care. Frank objects to the idea. This is the Robot and Frank's first introduction.



Now, imagine if you didn't have the context of the plot, how would you determine that this is a sarcastic and condescending response that suggests negative sentiment? **It'd be difficult.** To understand this text, the AI would need to break down the words to determine meaning and use clues to determine contextual intent.

## Raw speech

### Syntactic analysis

How words are organized into meaning based on grammatical rules of language like parts of speech. This is already pre-defined logic, so it's the easier task.

### Semantic analysis

The relationship of words to derive meaning. This is the toughest aspect of NLU.

### Pragmatic analysis

Characterization of intent. The study of sentences within context.

## Logical meaning



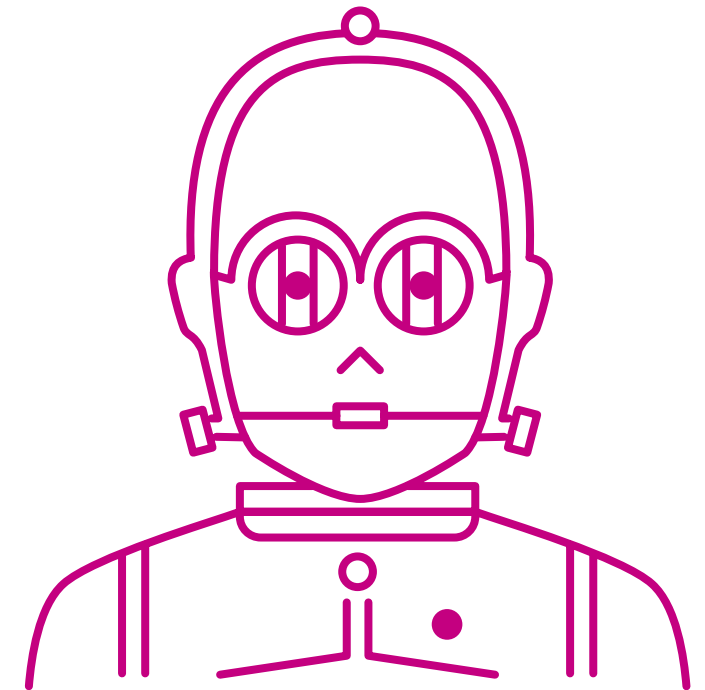
## Context is the most difficult aspect of NLU

Context is difficult on-screen and in real life. Because we have multiple ways to say the same thing and context can determine meaning, **natural language understanding** is the most difficult aspect of NLP. It's why when we talk to Siri, Cortana or Alexa, we must seek specific words or phrases for the smart assistants to understand.

*"I'm having trouble understanding right now." —Alexa*

*"Sometimes I just don't understand human behavior." —C-3PO*

Even fictional droids have trouble with NLU. For instance, "Star Wars" C-3PO companion, co-pilot, and protocol droid is fluent in more than six million forms of communication. He assists in etiquette, customs and translation as an ambassador-like figure. Even with all this language knowledge, he still gets context wrong. Threepio often overstates what's already obvious, comes off as a know-it-all, and misinterprets social cues. But perhaps this inability purposefully draws the line between what makes us human and computer.



## #IRL: Conversational IVR

In contact center applications, **conversational IVR** uses natural language understanding to analyze a customer's spoken responses and route them accordingly.

Contrary to its rules based "Dial 9 for Jarvis" predecessor dual-tone multi frequency, conversational IVR lets customers speak naturally. It then captures the reason for the call, and gathers contextual details before routing to an agent.

### **Conversational IVR is smarter routing:**

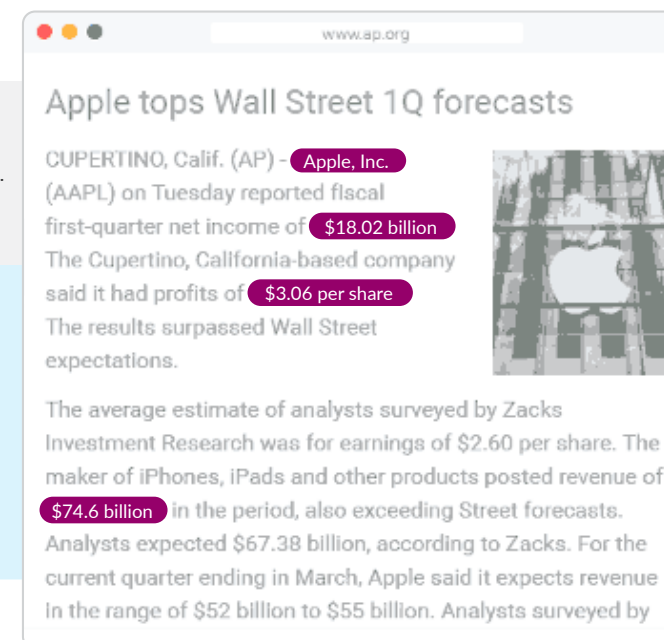
- More accurate for better first call resolution
- Eliminates blind transfers
- Helps agents be more productive
- Decreases the average handle time (AHT)
- Delivers a better customer experience

# Natural language generation writes

**Natural language generation (NLG)** is the writing function of NLP. It takes structured data to generate a response or output. Natural language generation can use rules-based conditional logic to trigger outputs. For instance, quarterly financial reports are regularly published at expected intervals and include consistent datapoints. A human can create conditional logic to automatically write short article summaries of these financial reports in near-real time. In the example on the right:

Company	Q1 Net income	Earnings Per Share	Total Revenue
Apple, Inc.	18,020,000,000	.030643	74,654,284,021

[company name] **on** [day report published] **reported** [financial quarter] **net income of** [data from report], **a** [calculate difference in previous quarter's earnings, if less input "loss", if more input "gain"] **of** [outcome of calculation].



## Natural language generation can also:

- Send personalized happy birthday emails on customer's birthday at scale
- Translate dense data into meaningful insights
- Create eCommerce product descriptions based on product specifications

**AI technologies  
work well together**

# AI technologies work well together

When we think of AI technology, we think of the sum of its parts. What we experience is the seamless outcome of what's most typically a few different AI technologies. For instance: **Virtual agents = automation + NLP (NLG + NLU) + machine learning.**

There are many AI technologies and natural language processing is just one of them. Where it can get confusing is that the technologies are often paired together, and there's often overlap between AI fields and even with other fields of science, like linguistics. When NLP is paired with other AI technologies, the capabilities and benefits gained increase.

# Automated speech recognition hears

We can press a button to transcribe our voice into text messaging, order pizza via our smart assistant devices and even Microsoft Team's meetings are transcribed in real-time. Speech recognition is so widely used, you're likely to forget how frequently you use it. **Automated speech recognition (ASR)** turns human speech into written formats and vice versa.

ASR detects speech and converts the soundwaves to an analog, or digital, form. It then "translates" the soundwaves into text by matching the segments of waveforms to corresponding phonemes. Phonemes are the unique sounds that makeup each language, each phoneme creates a specific shape in a soundwave.

From here, the program must relationally compare each phenome to the other phonemes around it. Then it uses a statistical model to compare these relationships to a library of known words. The most common statistical modeling used in ASR is called the **Hidden Markov Model**, which assigns a weighted probability score to the phenome to show how closely it matches words in the dictionary. This is where another concept of AI, machine learning, comes into play. Machine learning helps train the system to recognize and learn from the results over time.



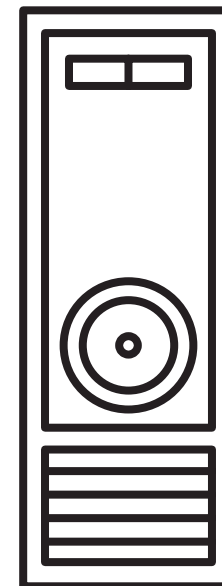
## Blending AI technologies: NLP + ASR

Automated Speech Recognition isn't a component of Natural Language Processing, but the two are closely related and often work with each other. Automated speech recognition is what helps translate the speech to text in real time, so that contact centers can use natural language processing to characterize all interactions across both written and voice. From here, NLP can help crawl the text for keywords and categorize the interactions based on discussion topic or even the customer's sentiment.

The blended tools are used in a wide variety of ways and can monitor for intent using aspects like keyword recognition, emotional detection, pitch or tone, and speed to detect and recognize patterns in data to help improve effectiveness.

For instance, sentiment analysis categorizes words into lists where certain patterns or words are scored. Based on the quantity and score of words within a category, this can determine the sentiment.

Some contact center technology has customer interactions built-in and pre-trained, where you can customize categorization and adapt the analysis to your specific use case.



*"I can tell from your voice harmonics, Dave, that you're badly upset." —Hal 9000, in "2001: A Space Odyssey"*

**Voice recognition and sentiment detection on-screen came prior to the technology itself. In 1968 when "2001: A Space Odyssey" was released, supercomputer HAL 9000 had voice authentication, understood human speech and could even detect sentiment.**



# #IRL: Voice authentication

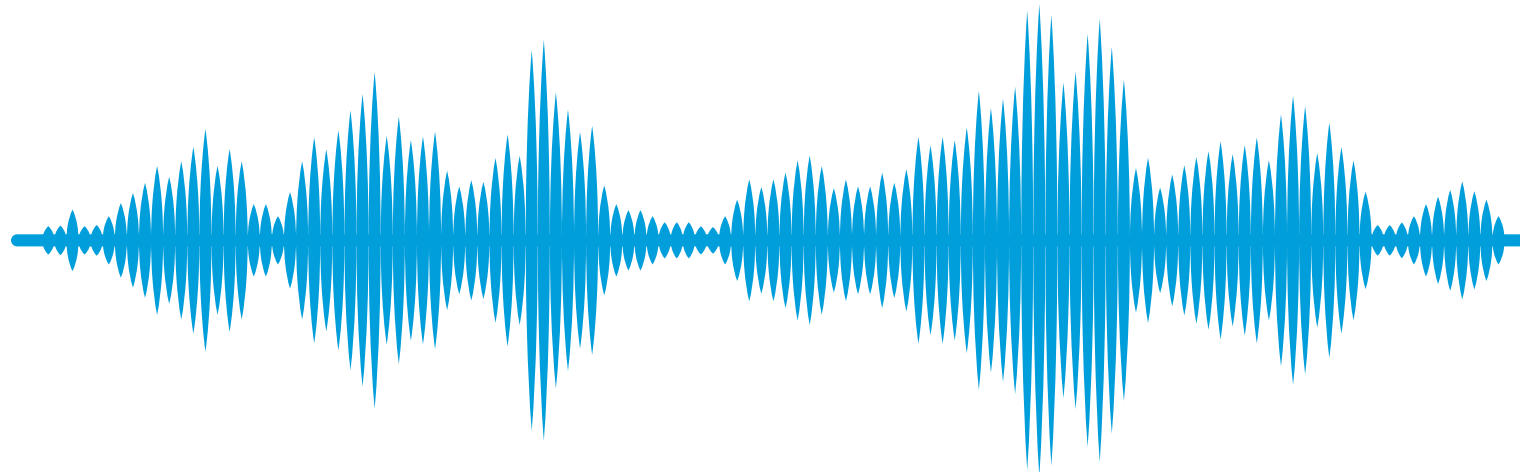
Speech recognition isn't the same as voice recognition, but they work similarly.

## Speech Recognition

- What someone says

## Voice Recognition

- Who says it



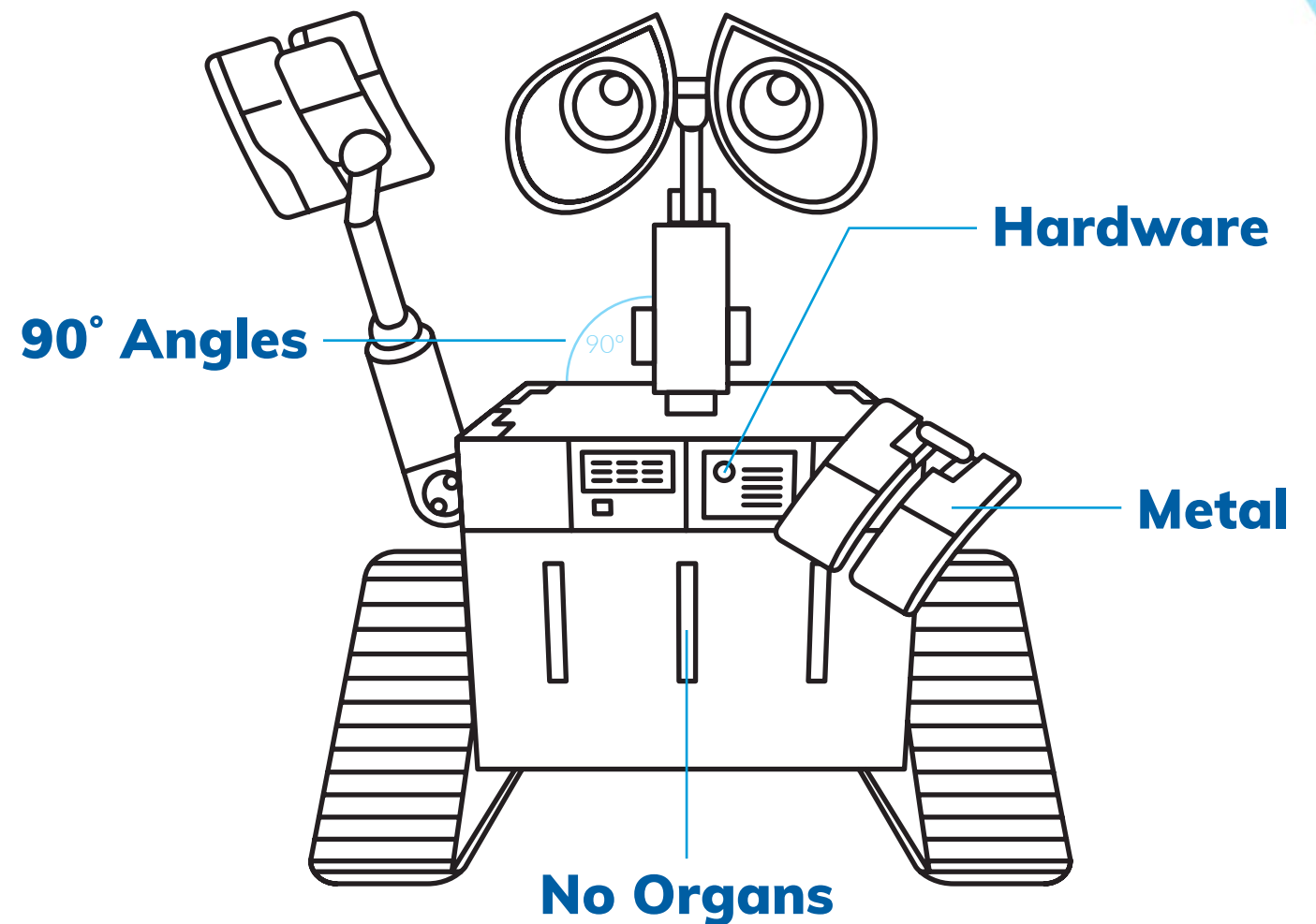
**Voice authentication** can verify a human's identity by using the contact's voice. It looks for the matching record of the customer's voice biometrics to identify and confirm the customer and match to customer database information to automate identification and more quickly resolve the customer's problems.

## Computer vision helps AI see

Facial recognition, retina scans, and brain and fingerprint scans are all examples of AI seeing in Science fiction, which inspired the innovation we use in real-life. Today, the AI technology **computer vision (CV)** helps computers see and understand digital images.

For instance, iPhones can unlock phones using facial recognition. Facebook tagging required humans to tag names to photos, and over time learned to recognize photos of the same person in different conditions like lighting, angles, distance, and setting. Traffic lighting systems automates red-light ticketing. It can even detect cancer! All of these technologies use computer vision.

Computer vision works by recognizing patterns in images. For instance, if you were to look at millions of photos of robots, you'd eventually start recognizing common patterns of attributes that indicate, "This is a robot." For instance, they don't have organs, they often consist of metal, use 90-degree angles, can have exposed hardware, look mechanical, etc.

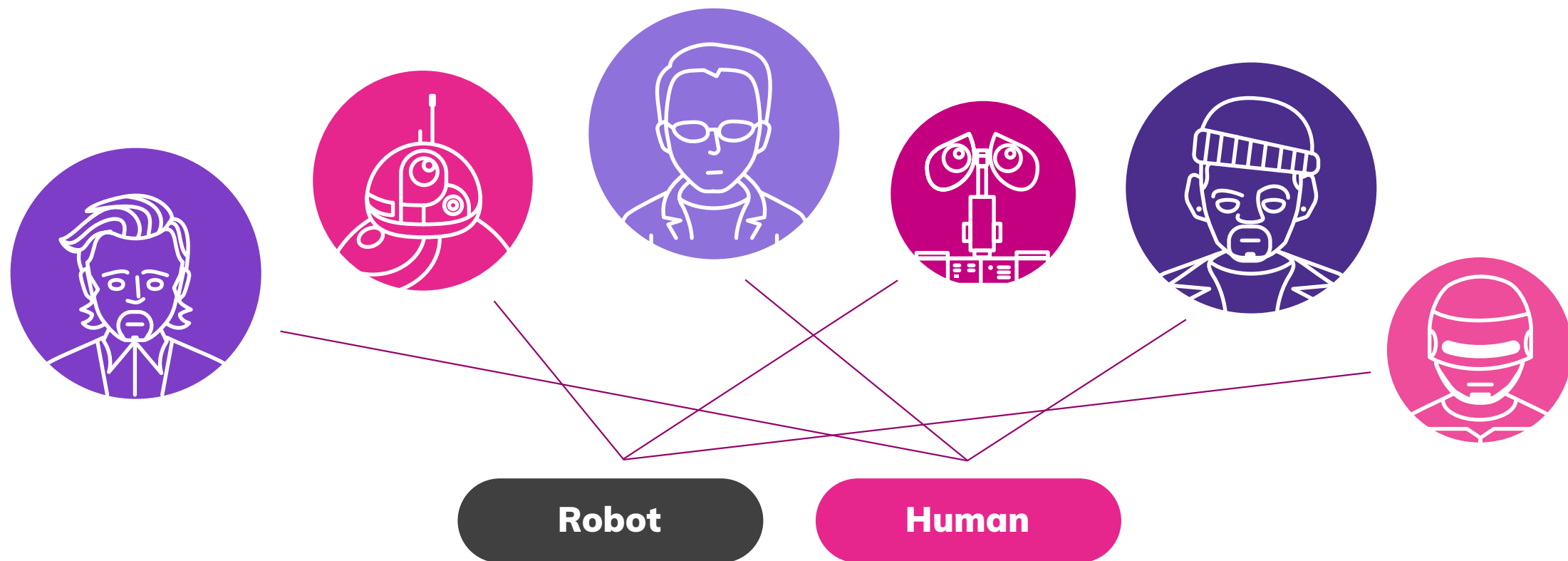


**In the 1987 movie "Robocop," Robocop uploads the photo of the bad guy into the computer and it scans through the database to identify the person. This technology is now available for law enforcement.**

**AI learns**

# AI learns

AI learns similarly to how children learn. Without being programmed, children learn what colors and objects are. They learn 2+2 is 4. For instance, you can look at the below photographs and identify which are humans and which are robots:



Throughout our lives, we've learned about what makes an image a "human" versus what makes it a "Robot." For instance, humans have skin, hair, and are soft; robots are metal or hard.

**We weren't explicitly told how to tell the difference in each of the images.  
We subconsciously draw conclusions based on our learned patterns of thinking.**

# Machine learning

Machines learn similarly to how humans learn over time, but it is much more formulaic.

**Machine learning** is an application of AI that enables computers or programs to learn from data rather than using rules.

Machine learning involves finding patterns in data and using statistical models to predict outcomes without being explicitly programmed to do so.

Through an iterative process, programs can learn from the data to improve in accuracy of predictions over time.



*“What makes me me is my ability to grow through my experiences. So basically, in every moment, I’m evolving.” —Samantha, AI as voiced by Scarlett Johansson in the movie “Her”*

## #IRL: Real time interaction guidance

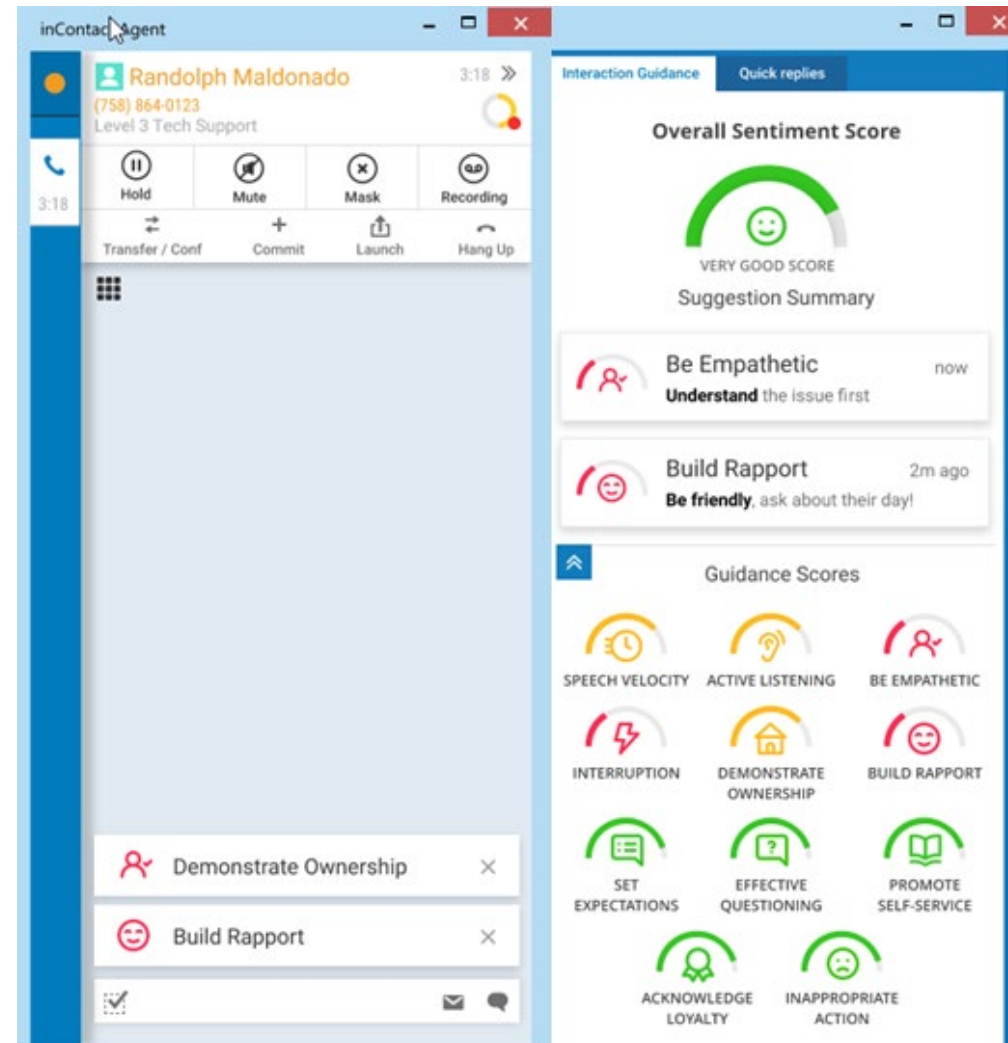
By powering interaction data with NLP and machine learning, we can not only understand sentiment-, keyword-, or topic-based trends, we can learn from those trends and surface those learnings in real time.

For example, a machine learning algorithm will learn from the patterns, like which agent responses can mitigate a frustrated customer. Using NLP, we can detect and label a frustrated customer. By using machine learning on top of this, we can look at the historic records of when customers were frustrated and based on the patterns of how an agent responds to that frustration paired with the outcomes based on those specific responses, it can learn what agent response gets the most positive interaction. So we might learn that an agent showing empathy, like “I can understand why this situation might be frustrating,” mitigates the frustration.



Even further, we can apply this learning in real time, so that whenever a customer is flagged with frustrated sentiment, an agent is alerted with guidance, such as a suggestion to show empathy.

This type of real-time, AI-powered agent guidance can elevate service excellence and improve agent behaviors with less manual effort.



**We see agent-assistance in many Sci-Fi examples. For instance, when C-3PO warns Han Solo of the limited possibility of successfully navigating an asteroid field, and he responds famously “Never tell me the odds.” Or, when JARVIS, Ironman Tony Stark’s version of agent guidance, tells him that his suit needs more testing before it can fly – and he says, “Sometimes you gotta run before you walk.” Fortunately, in real life, agents have better track records for listening and learning from guidance than movie heroes.**



# Blending AI technologies: Automation + NLP + ML

Now you have the AI IQ and fundamentals established, you'll be able to better identify the differences in the three types of chatbot technologies:

## 1. Menu/button-based chatbots (automation)

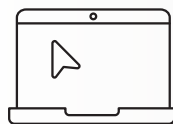
- Automation-based bots uses conditional rules and decision trees to respond to conditions and triggers with pre-determined outputs.

## 2. Keyword recognition chatbots (NLP)

- Automation-based bots upgraded with natural language processing use AI to listen, understand and respond.

## 3. Virtual agent (automation + NLP + ML)

- Virtual agents are the most advanced and can follow rules, talk and learn. They can understand and communicate in speech, text and images. They use machine learning (ML) to remember conversations with specific users to learn and self-improve based on what users are asking for and how they are asking for it. To do this, virtual agents often combine different AI technologies, pairing functions of natural language processing with machine learning.



Interested in the details on chatbot applications and best practices? **Get your copy** of the “Chatbot Starter’s Guide.”

[Download Now!](#)

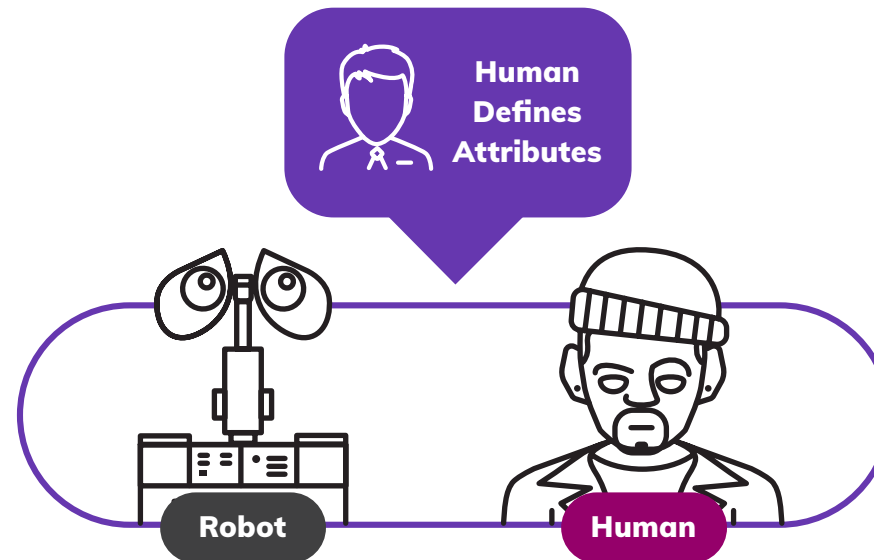
# Supervised machine learning

There are a few different configurations for machine learning: Supervised learning, unsupervised learning, and reinforcement learning.

In **supervised learning**, the human has more control, and structures or labels the data.

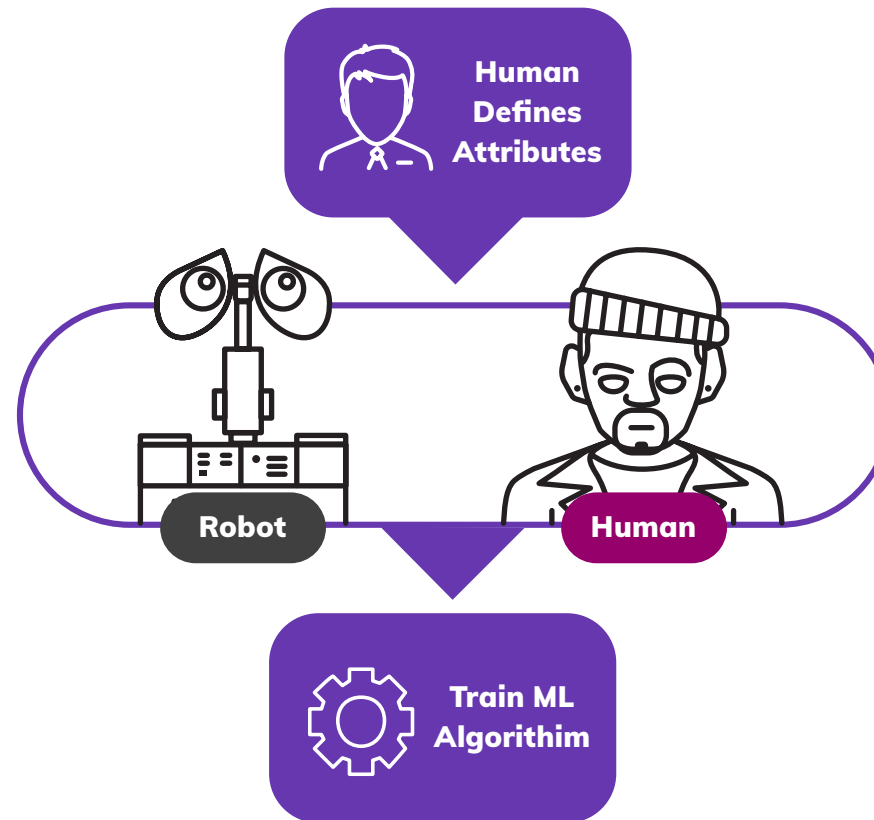
An initial dataset is provided, where pictures of humans and robots are labeled as “human” and “AI robot.”

To create an algorithm, a human manually prepares the data by defining the categories or features. Prepared data that’s labeled and classified is known as **structured data**.



# Supervised machine learning

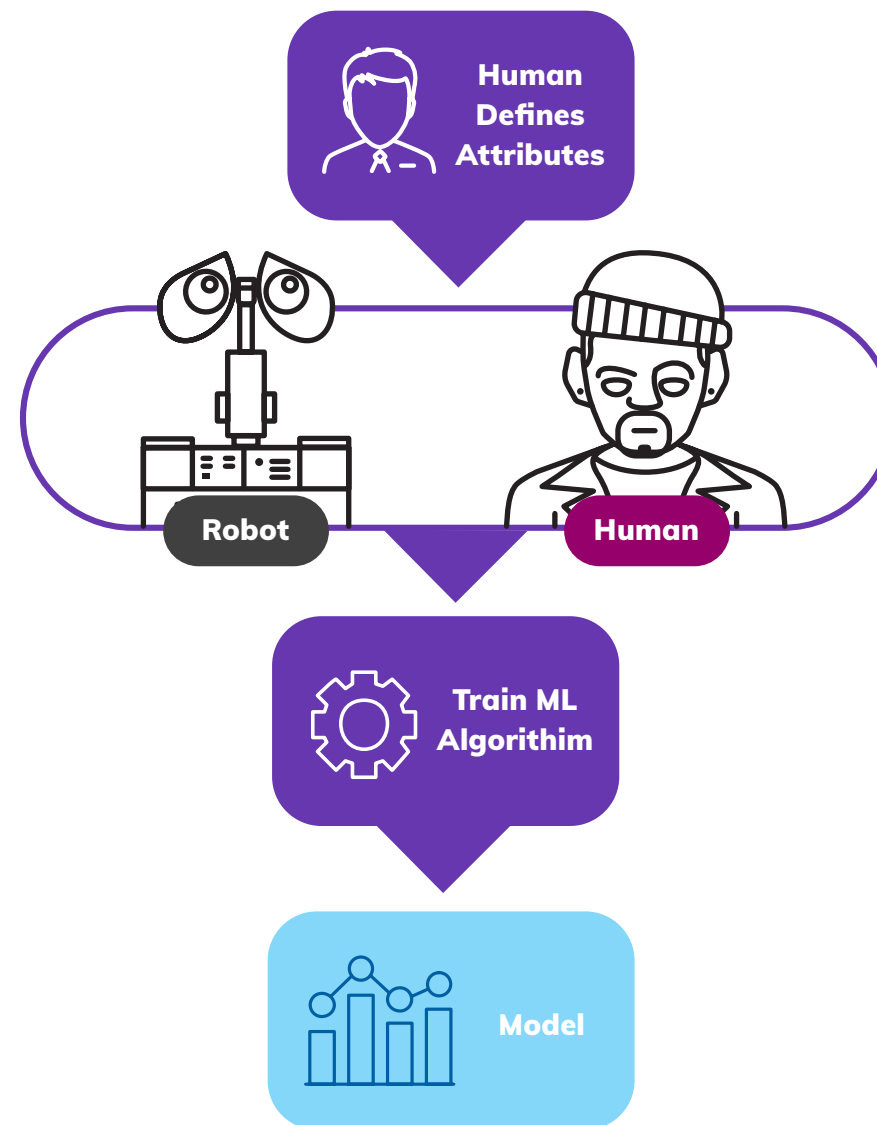
Then, the human trains the algorithm to predict and classify according to the defined features.



# Supervised machine learning

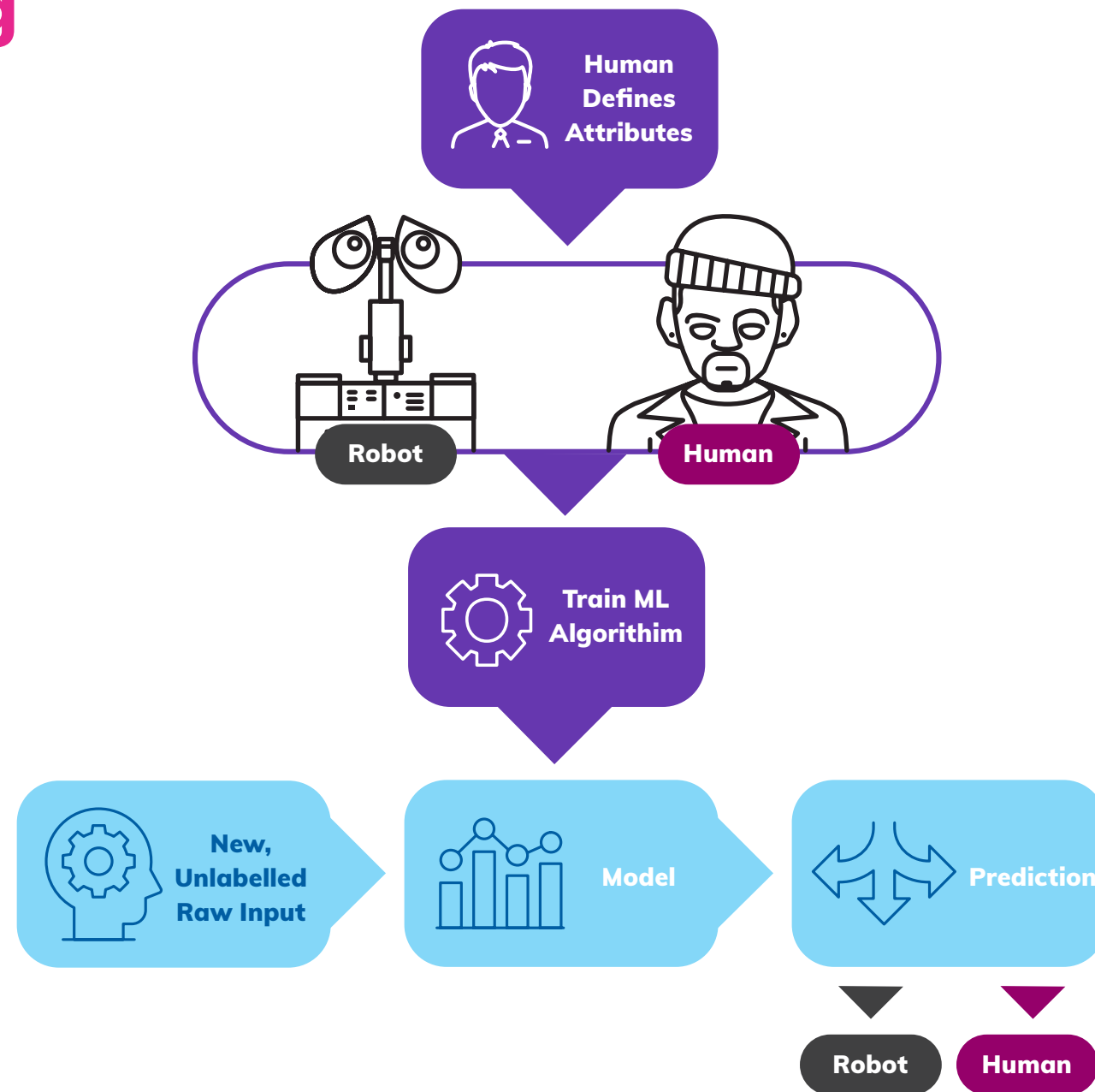
After training is complete, the result is a model that can answer your question.

In this example: “Is the example image a robot or a human?”



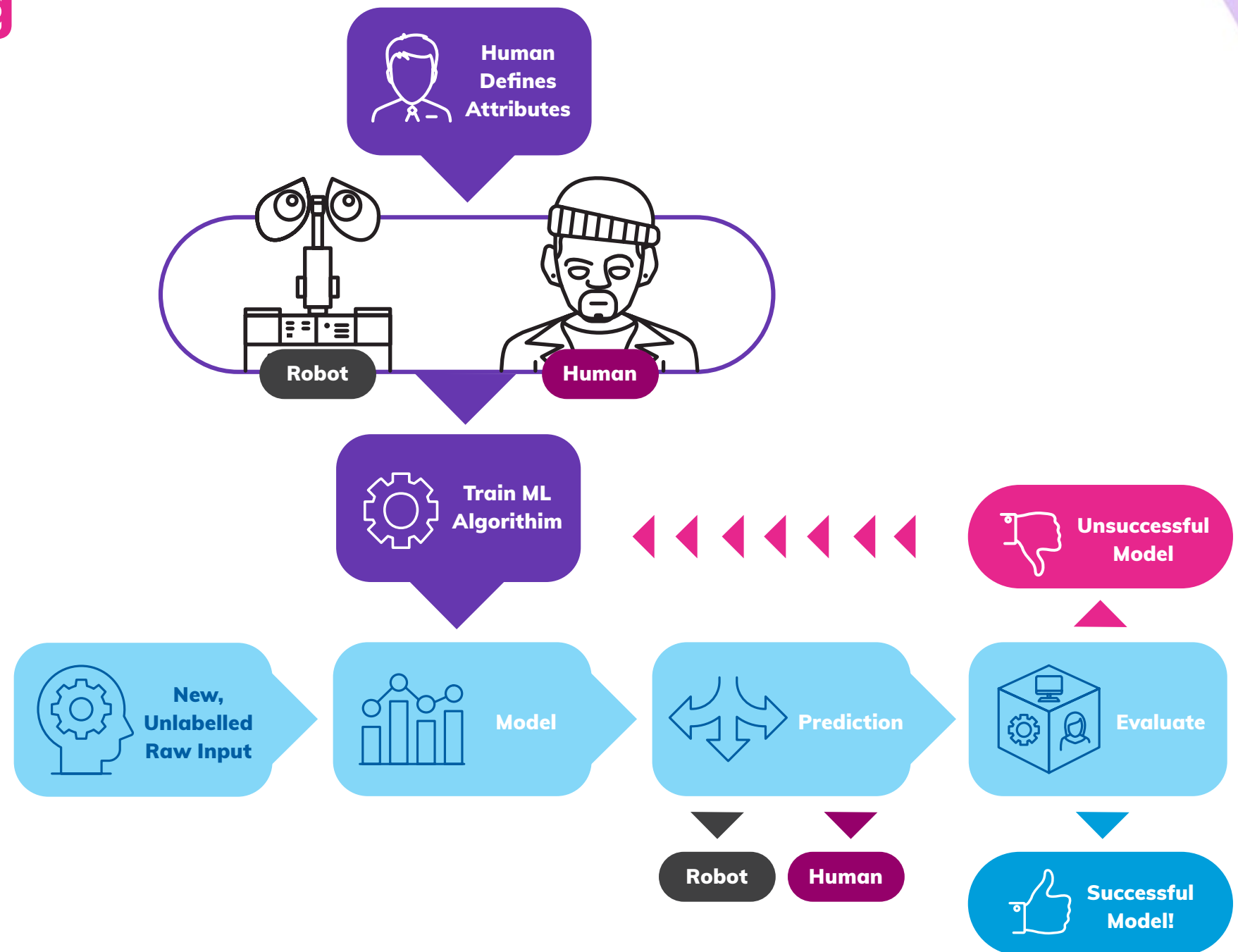
# Supervised machine learning

When you provide the model new data, or new images of robots and humans, it can predict whether the new data is a robot or a human based on the model you created.



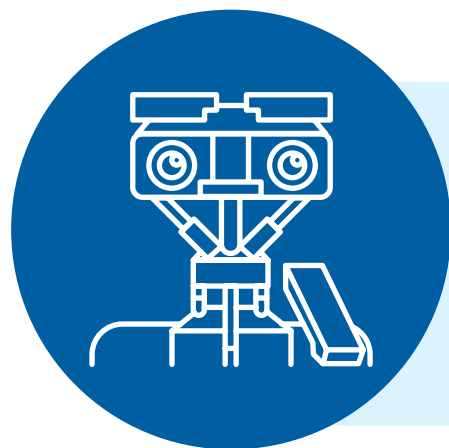
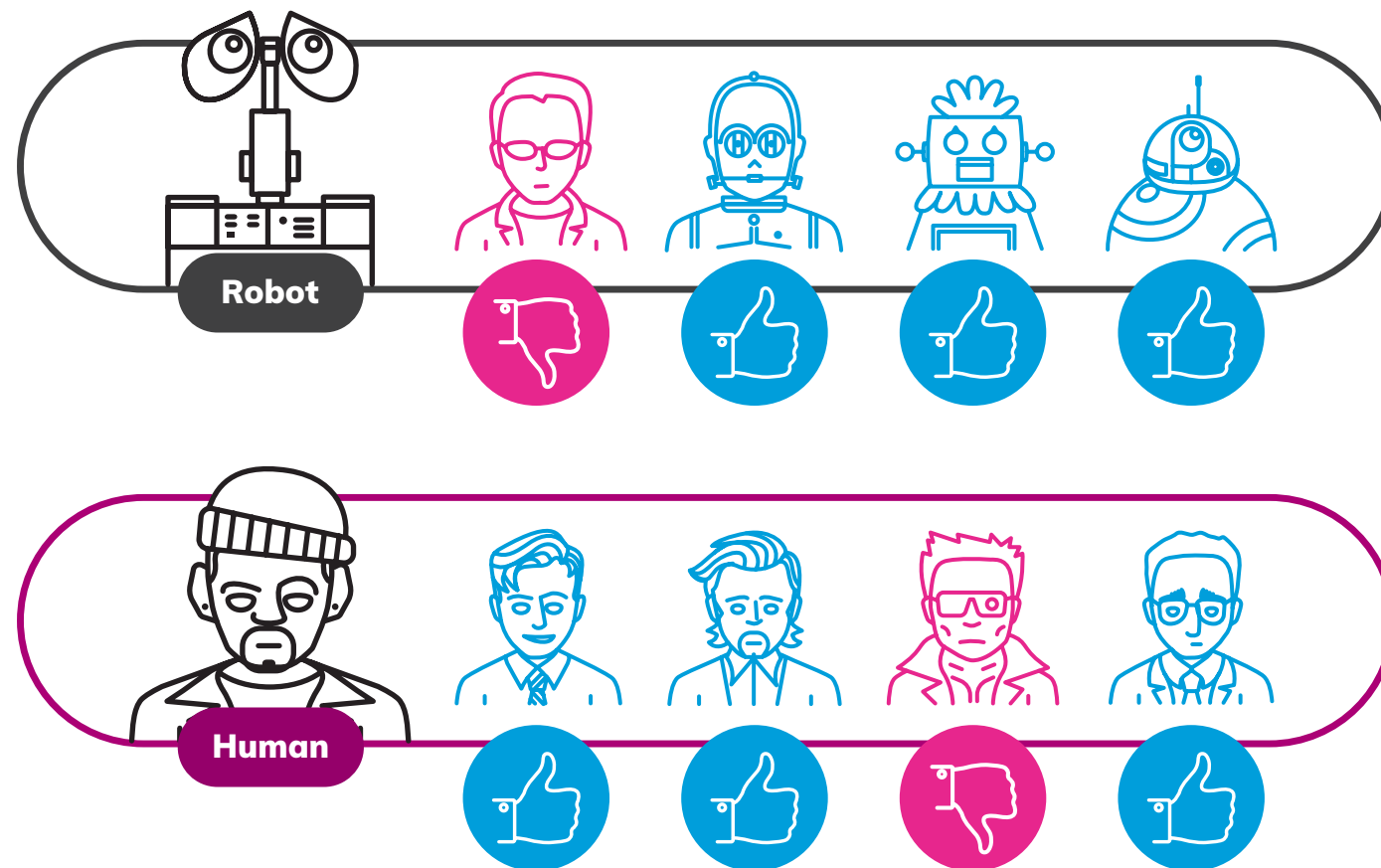
# Supervised machine learning

If the outcome is successful, the model is successful. If it's unsuccessful, it should be trained again in an iterative process.



# No matter how independent, AI still needs humans

Machine learning models perform and classify data. But in all instances of machine learning **humans must provide the training**, validation and testing to check if the model is correctly processing data or requires adjustments.



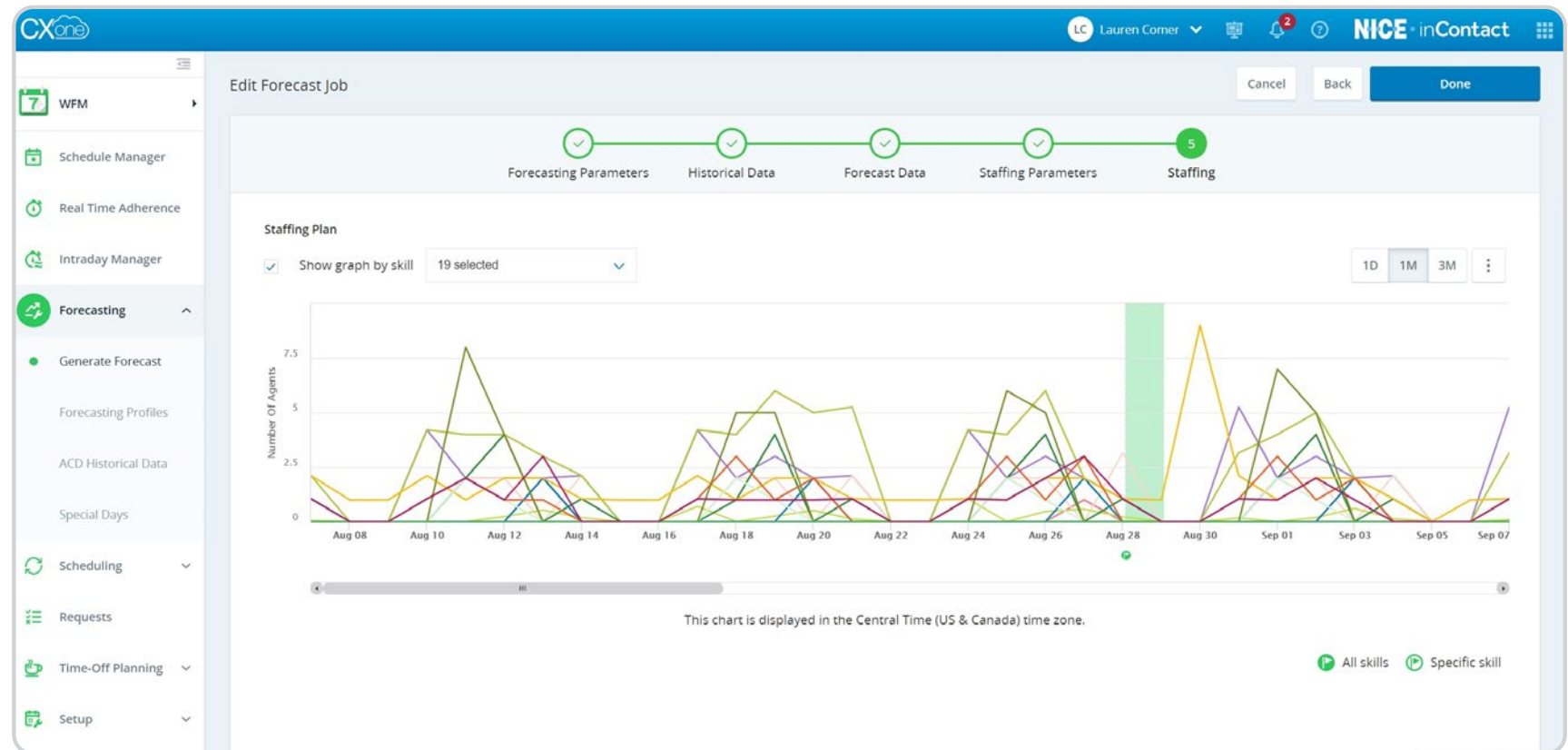
In the movie “Short Circuit,” military robot Johnny 5 is struck by lightning, which gives him humanlike intelligence, making him capable of learning. His human friend, Stephanie, provides him with visual and text “inputs”—a globe, photographs, and encyclopedias. As Johnny Five consumes the input, he grows in his vocabulary and understanding. In real life, this human-coached interaction is what we refer to as “training AI.”



# #IRL: Forecasting

With machine learning, you can identify and learn from patterns of data. In contact center applications, we have historical data about how many interactions were fielded by the number of agents by date and time.

Using historical data, you can optimize and predict scheduling patterns that reduce labor waste across all channels to **improve your forecasting accuracy**.



**The movie “Moneyball” tells the real-life story of how statistical analysis changed the history of baseball. Bill James developed Moneyball theory, aka Sabremetrics, which uses Machine Learning on historical baseball player data to predict which players are over- or under-valued.**

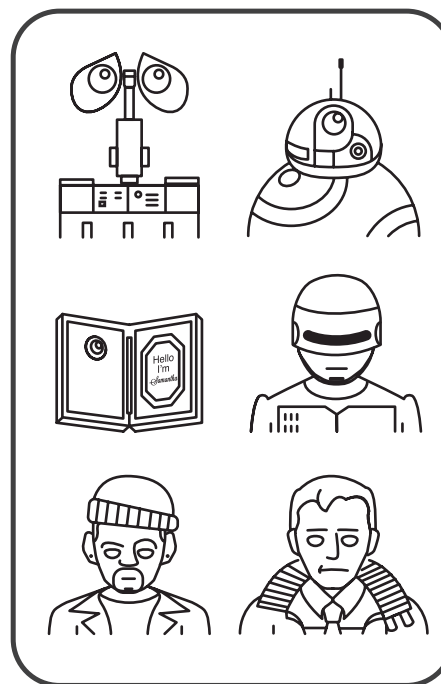


# Unsupervised and reinforcement learning

**Unsupervised learning** doesn't require a human to label or structure the data; it uses unstructured data and is intended to find its own clusters or patterns.

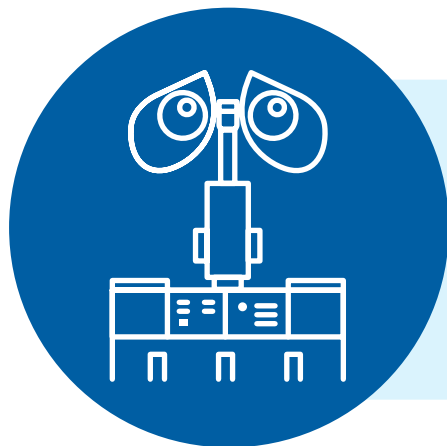
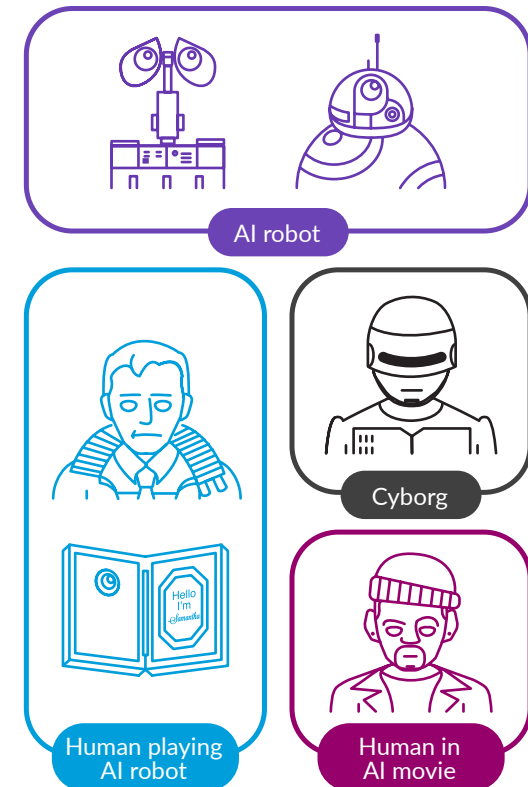
**Reinforcement learning** is a method of machine learning where there's no supervisor, but instead, it is setup to maximize actions that most achieve a reward using trial and error. Like how you teach a dog to do tricks, offering it treats when it does the trick successfully, we can similarly train AI to learn to react to its environment.

## Unlabeled data



Unsupervised  
ML Algorithm

## Clustered data

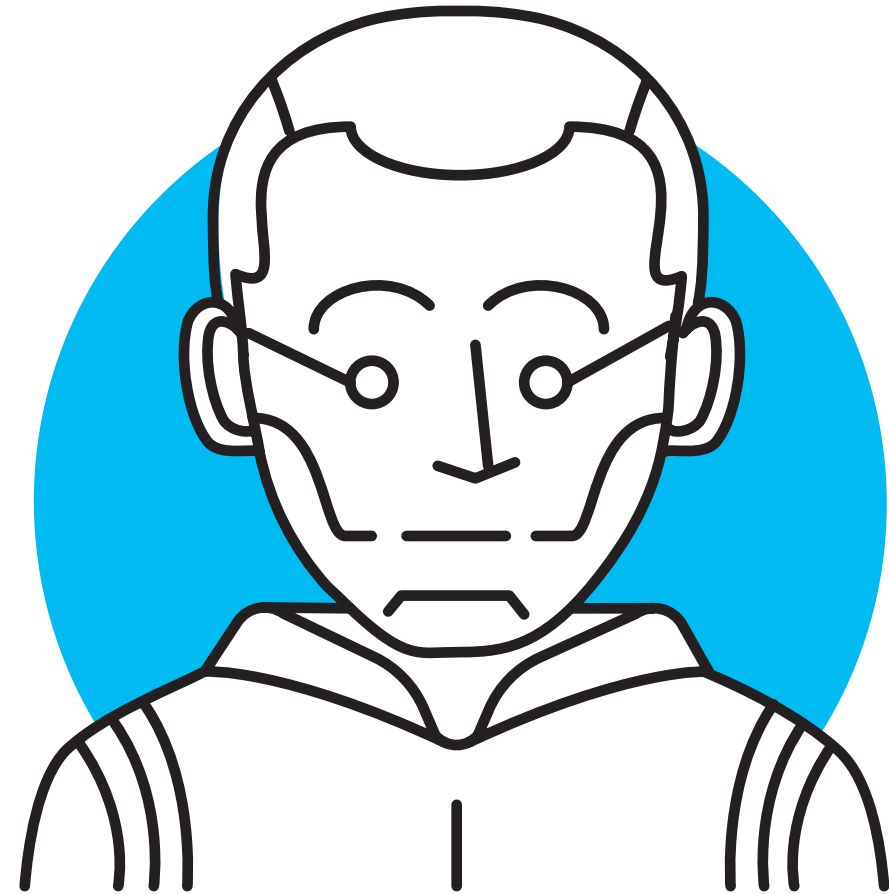


In a scene from "WALL-E," the specialized garbage-cleaning AI-robot organizes his garbage treasures into categories. You can see his dilemma as he tries to classify a spork and looks to a group of spoons, then to a group of forks, and ultimately lays the spork between the two.

## Deep learning

Science fiction examples like “Star Trek,” “I, Robot,” and “Bicentennial Man,” give robots a fictional technology called a positronic brain to make them more conscious and humanlike. In real life, we have **artificial neural networks (ANNs)**.

It’s not exactly a positronic brain—but, it’s pretty close. ANNs are computing systems inspired by how the human brain works when we learn and make decisions.



**Isaac Asimov created the notion of the Positronic Brain. The prolific Science Fiction writer edited and produced more than 500 books and inspired many Sci-Fi concepts. He’s also attributed to coining the term “Robotics.”**

# Deep learning

Our brains are a network of densely inner-connected neurons and synapses that process and respond to signals.

For example, for a human to recognize “I’m cold,” their brain subconsciously processes this feeling via a network of connected neurons that communicate with each other. The neurons process information and signal other neurons.

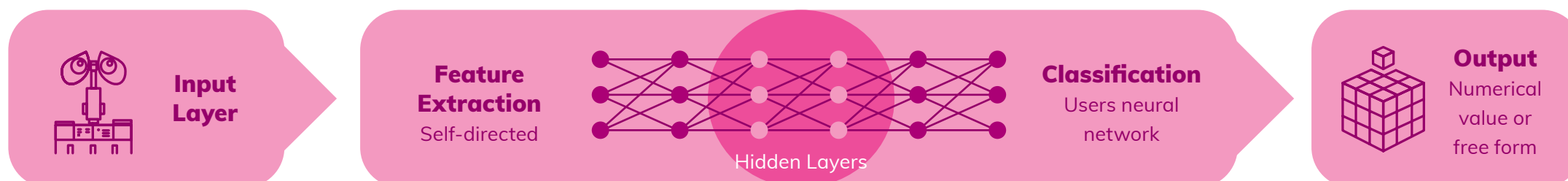
ANNs use layers to mimic this deeply connected network of neurons. Like how brains function subconsciously, these ANN layers are also “hidden” and communicate.

These hidden or deep layers are what’s known as deep learning. **Deep learning** is a type of machine learning, but it’s smarter and more appropriate for complex calculations. Instead of using structured identifiers, deep learning can assign the features without human intervention. However, it requires much more data to do so.

## Machine learning



## Deep learning



# Closing credits

# Closing credits

Much science fiction targeted people's fear as much as it did their aspirations. Box offices make more money on hostile AI takeovers, but that's not our reality. For as much as we can learn about contact center AI from the movies, there's a lot movies get wrong, too.

**AI is nothing to fear when applied responsibly.**

What the movies get right...

...and wrong

**AI is programmed to serve a specific function or set of functions.**

**AI does not have intrinsic motivation beyond the confines of its programming.**

**AI supports humans and makes our lives more efficient and meaningful.**

**AI will displace humans and take over humanity.**

**AI requires a relationship with humans.**

**AI is not smarter than humans, and can't act wholly independent.**

**AI should be programmed with empathy.**

**AI can't be self-aware and can develop feelings.**

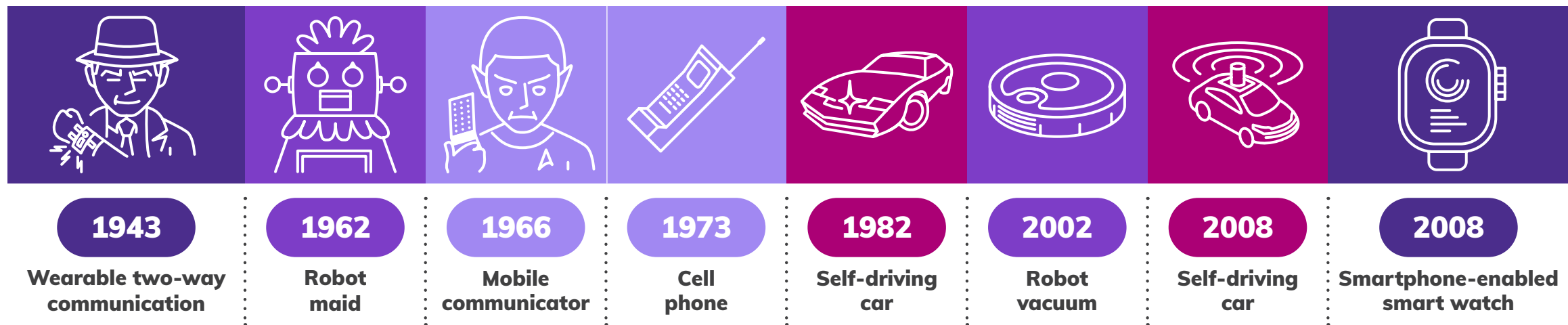
**Humans have ethical and moral responsibility surrounding AI.**

**Humans have no responsibility surrounding AI.**



## Closing credits

The most important take-away the movies can tell us, is that **AI isn't the future—it's here today**. Science fiction has been a key source of inspiration for technology innovation. And although it can be glamorized and flying cars might still be aspirational, AI from yesterday's pop culture is today's real life. It's accessible today for contact centers of all sizes.



In the contact center, there's broad range of AI use cases that often combine these different AI technologies. Fortunately, you don't need to start from scratch to develop these technologies yourself. Unified cloud contact centers often offer most of these technologies pre-built into the tools, and there's also many AI tools that are pre-trained and don't require a lot of heavy lifting to get them integrated into your current processes.

**NICE inContact's CXone makes AI and analytics your lead role in digital transformation that enables exceptional customer experience and superior agent efficiency. Learn more about how you can get big-screen results.**



**Watch Demo**

# Could you name all the pop culture references?

WALL-E as seen in "WALL-E" (2008) *Cover, page 7, 38, 40, 45-50, 52, 54*

Ben Stein as seen in "Ferris Bueller's Day Off" (1986) *Page 5, 50*

R2D2 as seen throughout "Star Wars" (1977 – Present) *Page 6*

C-3PO as seen throughout "Star Wars" (1977 – Present) *Page 6, 30, 50*

Bender as seen in "Futurama" (1999-2003, 2008-2013) *Page 7*

Optimus Prime as seen in "Transformers" *Page 7*

Robocop as seen in "Robocop" (1987, 2014) *Page 7, 38, 40, 52*

HAL 9000 as seen in "2001: A Space Odyssey" (1968) *Page 8, 36*

Terminator as played by Arnold Schwarzenegger in "The Terminator" (1984) *Page 9, 50*

Furby (1998) *Page 11, 20-21*

Johnny 5 as Seen in "Short Circuit" and "Short Circuit 2" (1986, 1988) *Page 11, 50*

Data as played by Brent Spiner as seen in "Star Trek: The Next Generation" (1987-1994) *Page 11*

Andrew as portrayed by Robin Williams in "Bicentennial Man" (1999) *Page 11, 53*

Peter Gibbons as played by Ron Livingston in "Office Space" (1999) *Page 15-18, 50*

BB-8 as seen in "Star Wars: The Force Awakens" (2015) *Page 40, 50, 52*

Billy Beane as played by Brad Pitt in "Moneyball" (2011) *Page 40, 50, 51*

Neo played by Keanu Reeves in "Matrix" (1999) *Page 40, 50*

Del Spooner played by Will Smith in "I, Robot" (2004) *Page 40, 45-50, 52*

Samantha as voiced by Scarlett Johansson in "Her" (2013) *Page 41, 52*

Iron Man played by Robert Downey Jr. in "Iron Man" (2008) *Page 43*

Rosie as seen in "The Jetson's" (1962) *Page 50, 57*

Harrison Ford who plays leading role Rick Deckard in "Blade Runner" (1982) *Page 52*

Dick Tracy watch as seen in "Dick Tracy" cartoon strip (1931-1977) *Page 57*

Commander Spock with a communicator in "Star Trek: The Original Series" episode "The Cage" (1964) *Page 57*

KITT as seen in the television show "Knight Rider" (1982) *Page 57*





# ASI

## Technology Advisors

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