

# Artificial Intelligence for everybody - AI platforms of tomorrow

Marcel Franke  
Specialist Data and AI, Microsoft



[linkedin.com/in/marcelfranke/](https://www.linkedin.com/in/marcelfranke/)

# What is Artificial Intelligence



„...to find how to make machines...solve kinds of problems  
now reserved for humans...”



# Artificial Intelligence



## Machine Learning



## Deep Learning



1950

1960

1970

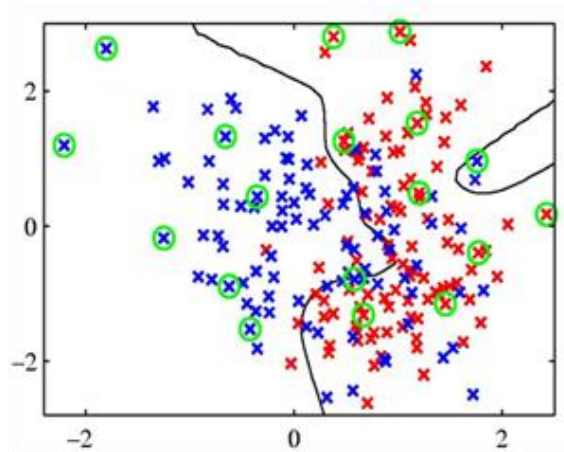
1980

1990

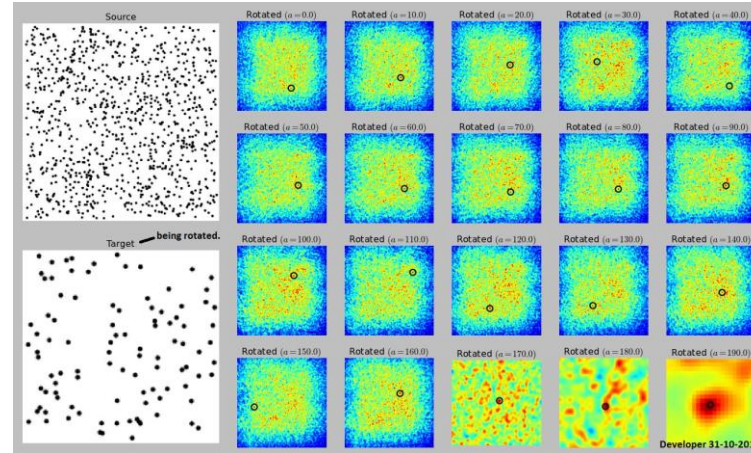
2000

2010

# What is it all about?



<https://lmb.informatik.uni-freiburg.de/lectures/spr/>

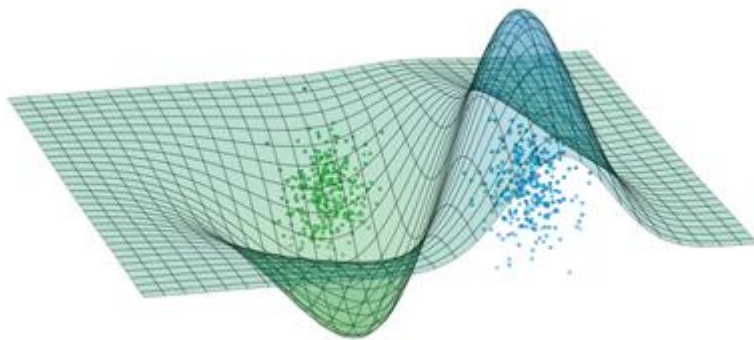


<https://dsp.stackexchange.com/questions/517/point-pattern-recognition>

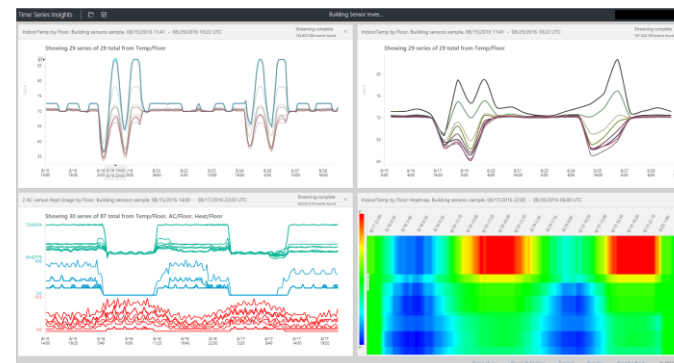


<https://docs.microsoft.com/en-us/cognitive-toolkit/object-detection-using-fast-r-cnn>

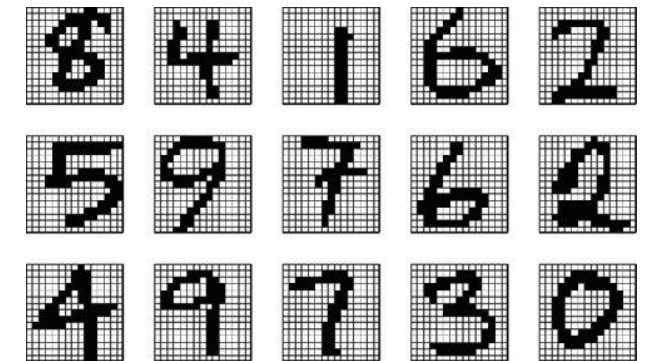
## Recognize pattern in data



<http://europeanpatternrecognition.eu/>



<https://docs.microsoft.com/sv-se/azure/time-series-insights/time-series-insights-overview>



<https://www.safaribooksonline.com/library/view/combining-pattern-classifier/9781118914540/c01.xhtml>



# Why now?

**\$40B**

estimated additional  
revenue/shifting revenue  
driven by AI in three years

**85%**

Enterprises using  
AI by 2020

AI advancements

Pervasive data

Cloud compute



PC

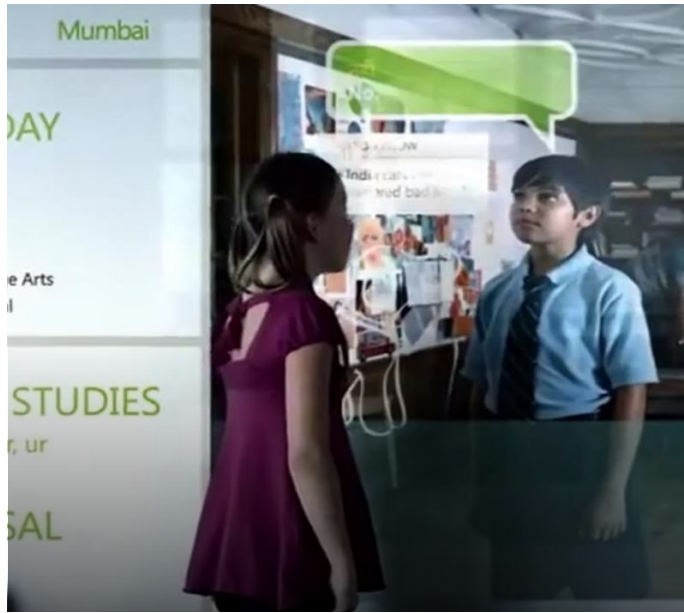


Web



AI

# The Promise of Artificial Intelligence



Education



Healthcare



Transportation



Agriculture

Status Quo





t3n News > Digitale Wirtschaft > Ist künstliche Intelligenz in deutschen Unternehmen angekommen?

News

## Studie: Ist künstliche Intelligenz in deutschen Unternehmen angekommen?



Wie weit sind deutsche Unternehmen mit KI-Technologien? (Grafik: Shutterstock)

17.05.2018, 08:23 Uhr

**Es gibt bereits viele Anwendungsfälle für KI-Technologien. Diese können Unternehmen massive Vorteile bringen. Doch wie viele deutsche Unternehmen setzen bereits auf künstliche Intelligenz?**



**Andreas Domin**

Informatikstudent mit einer Leidenschaft für Entwicklung & Design



### VERWANDTE THEMEN

Künstliche Intelligenz

Studie

Kunden glücklich machen. Schnell, einfach und über jeden Kanal. Machen Sie das?

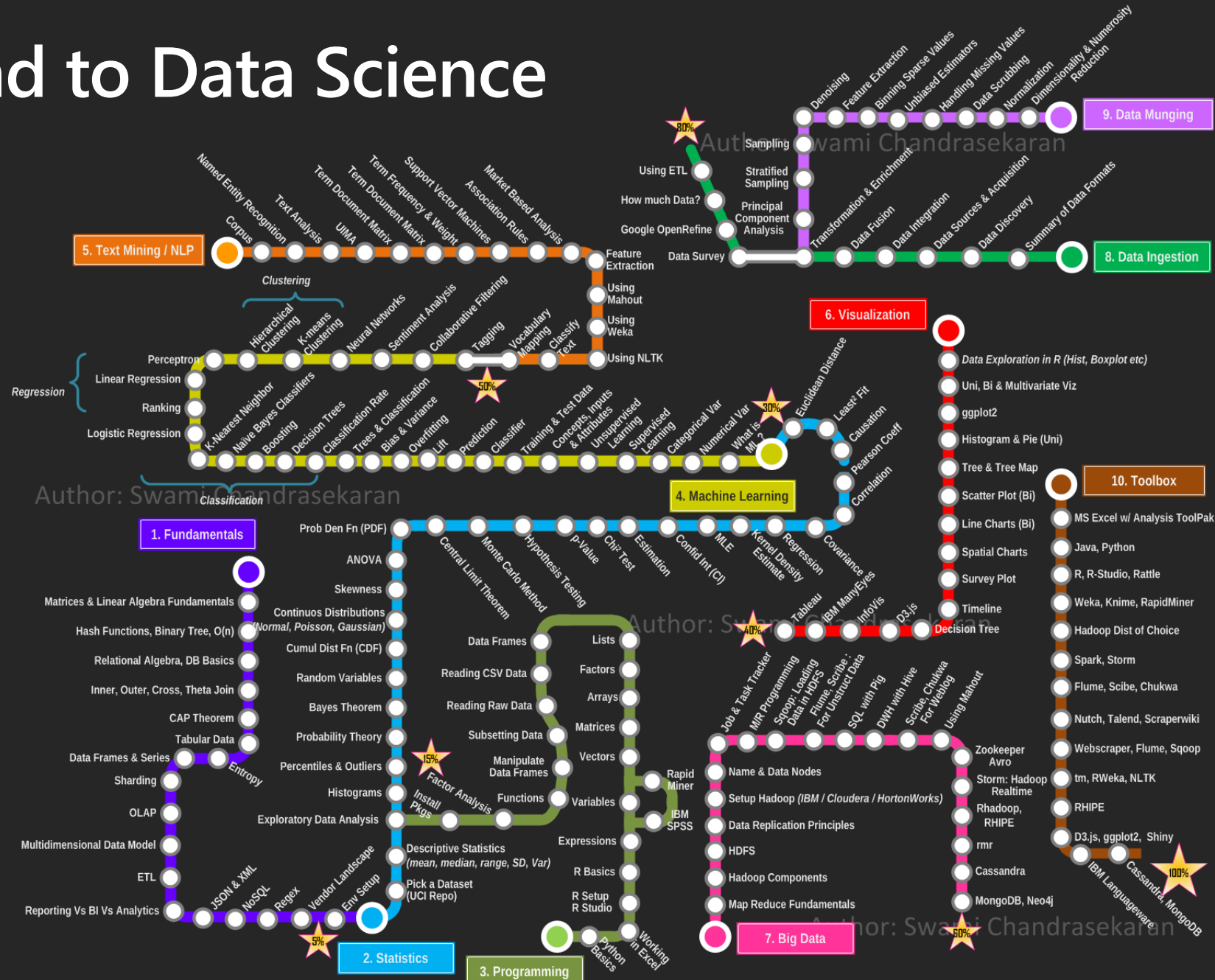
JETZT TESTEN



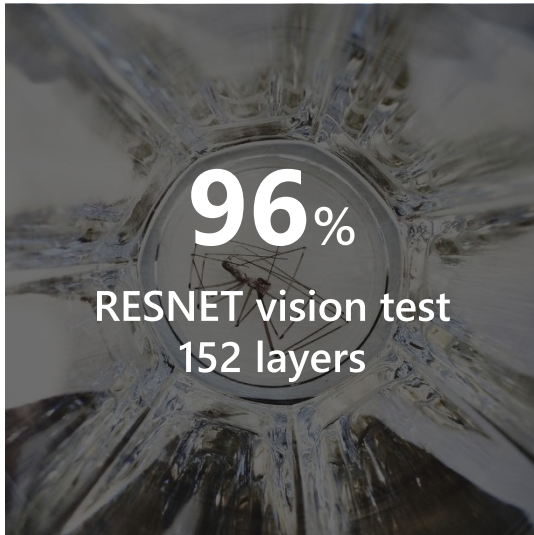
t3n Newsletter

- IDC study with 350 German companies
- 52% Planning or working with AI
- Focus: Increase efficiency & productivity, reduce costs
- Biggest hurdle: shortage of skilled employees for 80% of the companies
- Every 4th company doesn't know where to start

# The road to Data Science

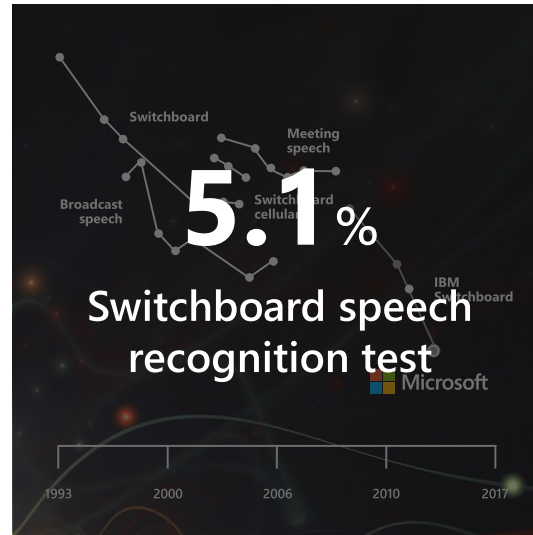


# Microsoft AI breakthroughs



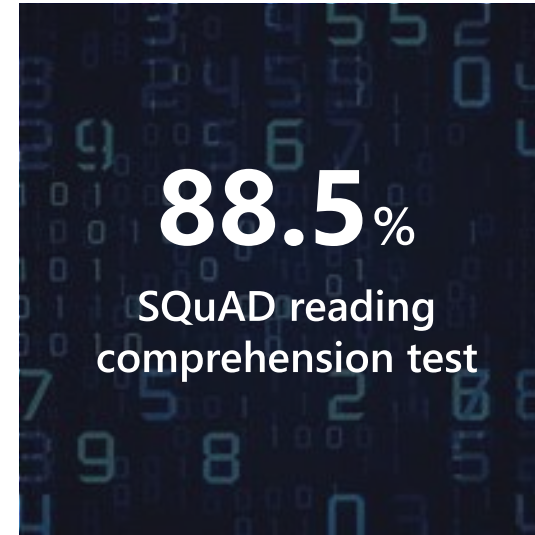
**2016**

Object recognition  
Human parity



**2017**

Speech recognition  
Human parity



**January 2018**

Machine reading comprehension  
Human parity



**March 2018**

Machine translation  
Human parity



**Let's build intelligent Products**

Microsoft's Vision:

Design AI to amplify  
human ingenuity



Microsoft's aim:

Make AI *available to everyone*



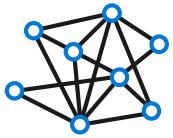
*We are pursuing AI to empower every person and every institution ... so that they can go on to solve the most pressing problems of our society and our economy.*

*– Satya Nadella, CEO, Microsoft*

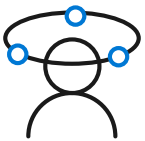




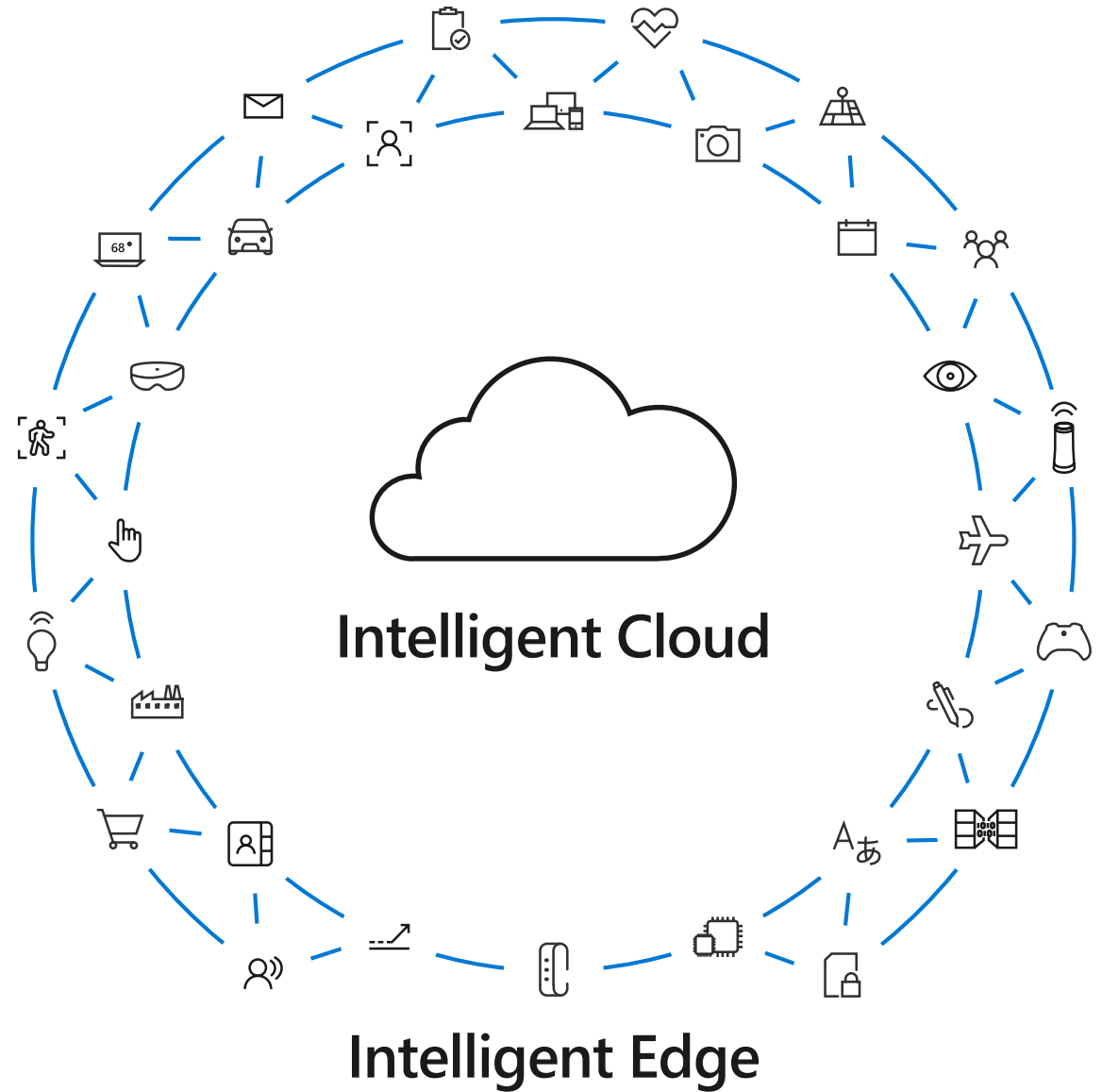
Ubiquitous  
computing



Artificial  
Intelligence



Multi-sense,  
multi-device experiences



**Goal #1: Make it easy to use!**

**Goal #2: No rocket science!**

**Goal #3: Adopt where needed!**

# Here's how we can help

1 | Cloud and edge AI services

2 | Friendly conversational AI

3 | Open AI platform and tools

4 | Real-time AI infrastructure

5 | AI on the Edge



# Here's how we can help

1 | Cloud and edge AI services

2 | Friendly conversational AI

3 | Open AI platform and tools

4 | Real-time AI infrastructure

5 | AI on the Edge

# Cognitive Services

Broad services



**Cognition**

Vision

Speech

Language

Knowledge

Search

Any scenario



**Custom training**

Custom vision

Custom speech

Custom voice

Custom language

Custom search

Custom translation

Everywhere



**Cloud**



**On Premises**

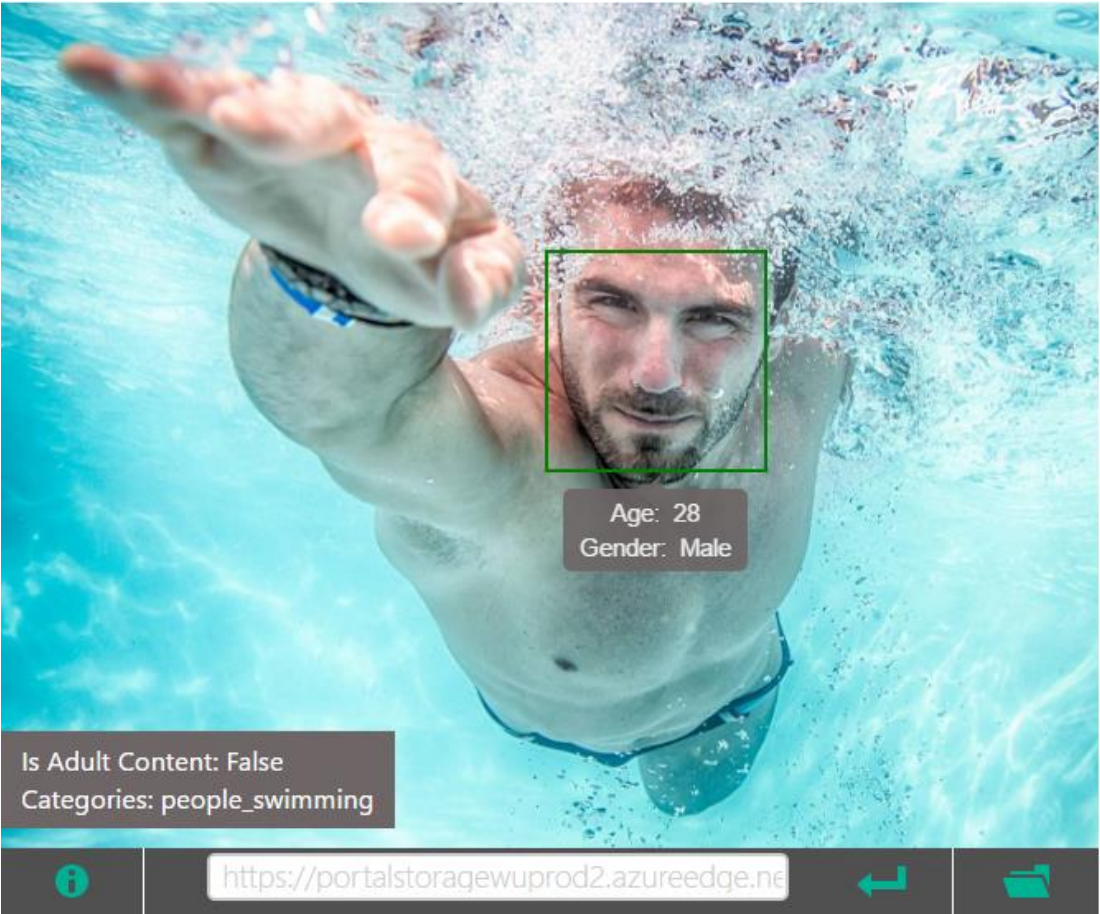


**Mobile devices**



**IoT**

# Microsoft Cognitive Services: Developer API



Feature Name	Value
Description	{ "type": 0, "captions": [ { "text": "a man swimming in a pool of water", "confidence": 0.7850108693093019 } ] }
Tags	[ { "name": "water", "confidence": 0.9996442794799805 }, { "name": "sport", "confidence": 0.9504992365837097 }, { "name": "swimming", "confidence": 0.9062818288803101, "hint": "sport" }, { "name": "pool", "confidence": 0.8787588477134705 }, { "name": "water sport", "confidence": 0.631849467754364, "hint": "sport" } ]
Image Format	jpeg
Image Dimensions	1500 x 1155
Clip Art Type	0 Non-clipart
Line Drawing Type	0 Non-LineDrawing
Black & White Image	False
Is Adult Content	False
Adult Score	0.14916780591011047



# Use it in your apps & products



# Here's how we can help

1 | Cloud and edge AI services

**2 | Friendly conversational AI**

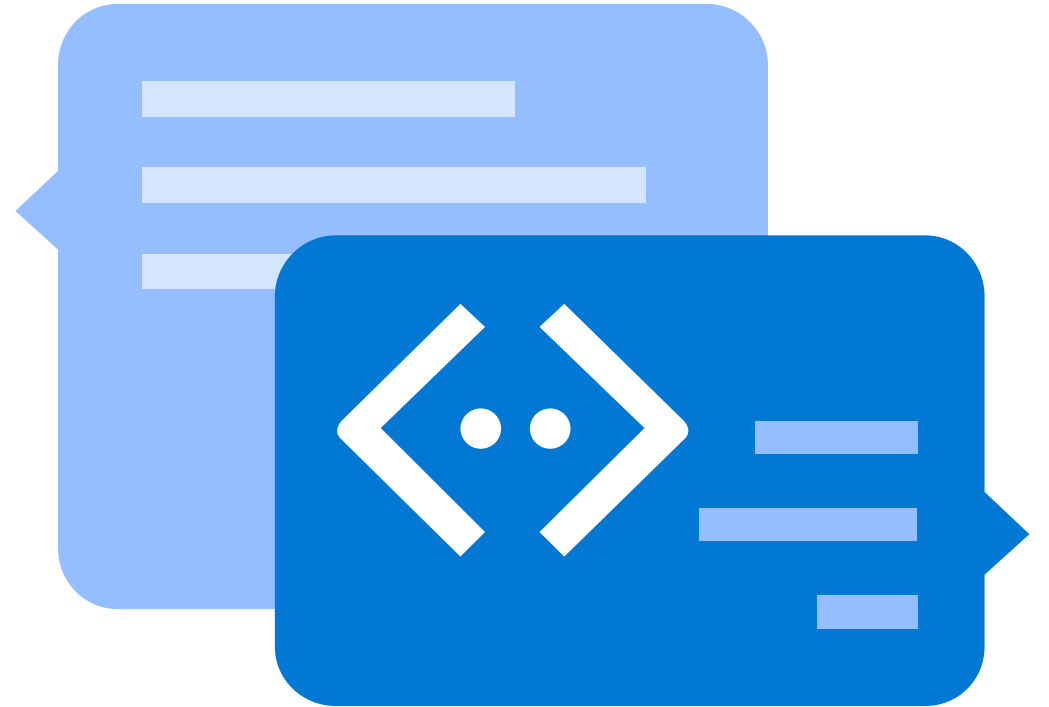
3 | Open AI platform and tools

4 | Real-time AI infrastructure

5 | AI on the Edge

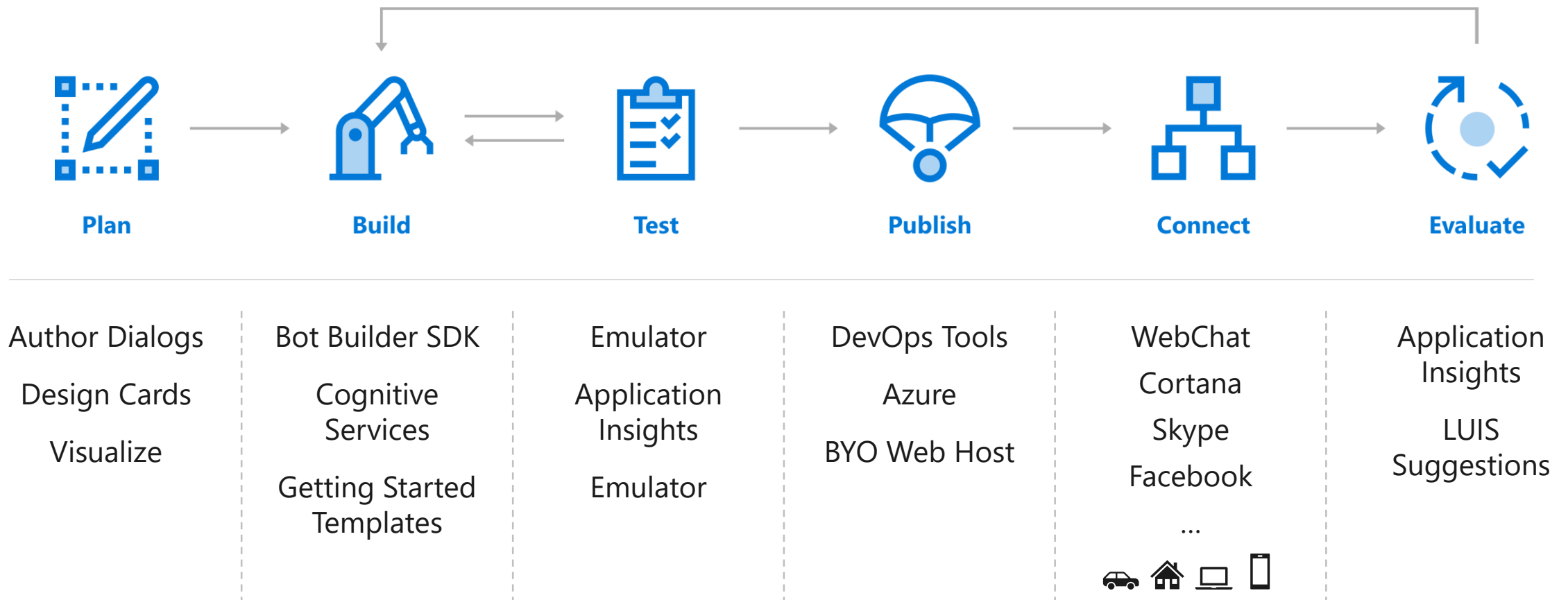
# Azure Bot Services

300,000 developers!



# Create a Conversation with Bot Service

Comprehensive framework for the lifecycle of your project





# Here's how we can help

1 | Cloud and edge AI services

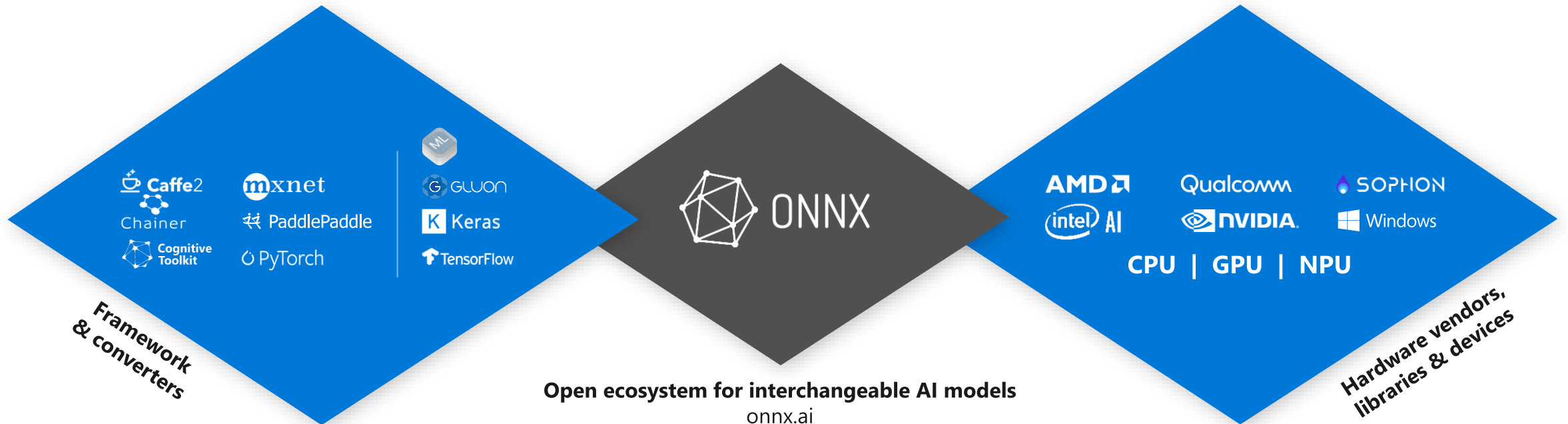
2 | Friendly conversational AI

3 | Open AI platform and tools

4 | Real-time AI infrastructure

5 | AI on the Edge

# Open AI Framework



# Open AI Platform

Use any framework or library

Manage training jobs locally, scaled-up or scaled-out

Git based checkpointing and version control

Service side capture of run metrics, output logs and models

Use your favorite IDE, and any framework

USE ANY FRAMEWORK OR LIBRARY



USE ANY TOOL



USE THE MOST POPULAR INNOVATIONS

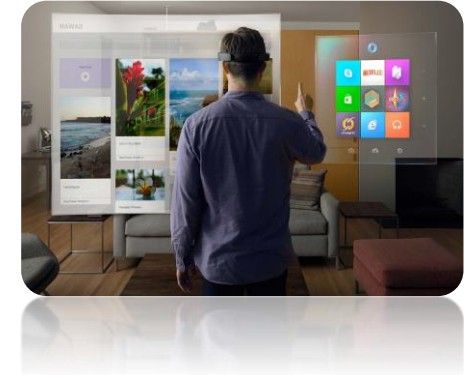
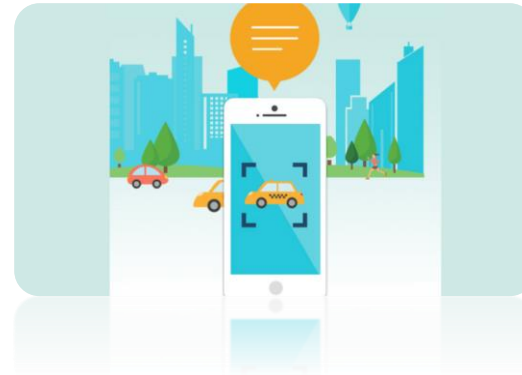


**For what can we use it?**



# Build intelligent Apps...infuse AI

Intelligent Agents  
Augmented Reality

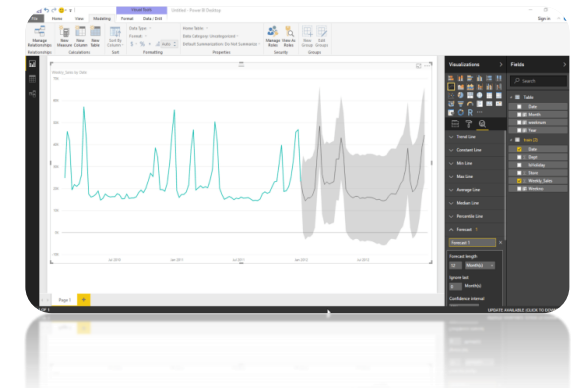
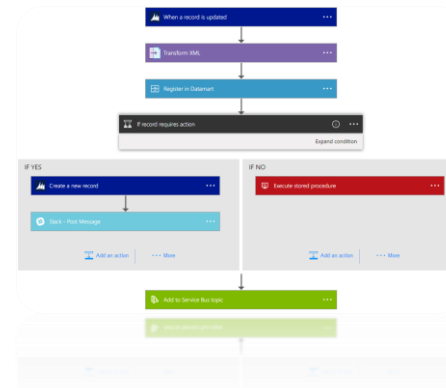


Infuse AI into your apps



Automate Processes

Predictions & Optimizations



# Ensuring AI Empowers Us All





A group of five diverse people are gathered around a wooden table in a cafe or office setting. Two men and three women are present. One man on the left is looking at a laptop. A woman next to him is also working on a laptop. In the center, a man is looking towards the right. A woman with curly hair is speaking and gesturing with her hands. On the far right, another woman is listening. The table is cluttered with laptops, papers, and coffee cups. The background shows a busy cafe environment with other patrons and large windows.

TOGETHER WE'RE CHANGING THE WORLD

