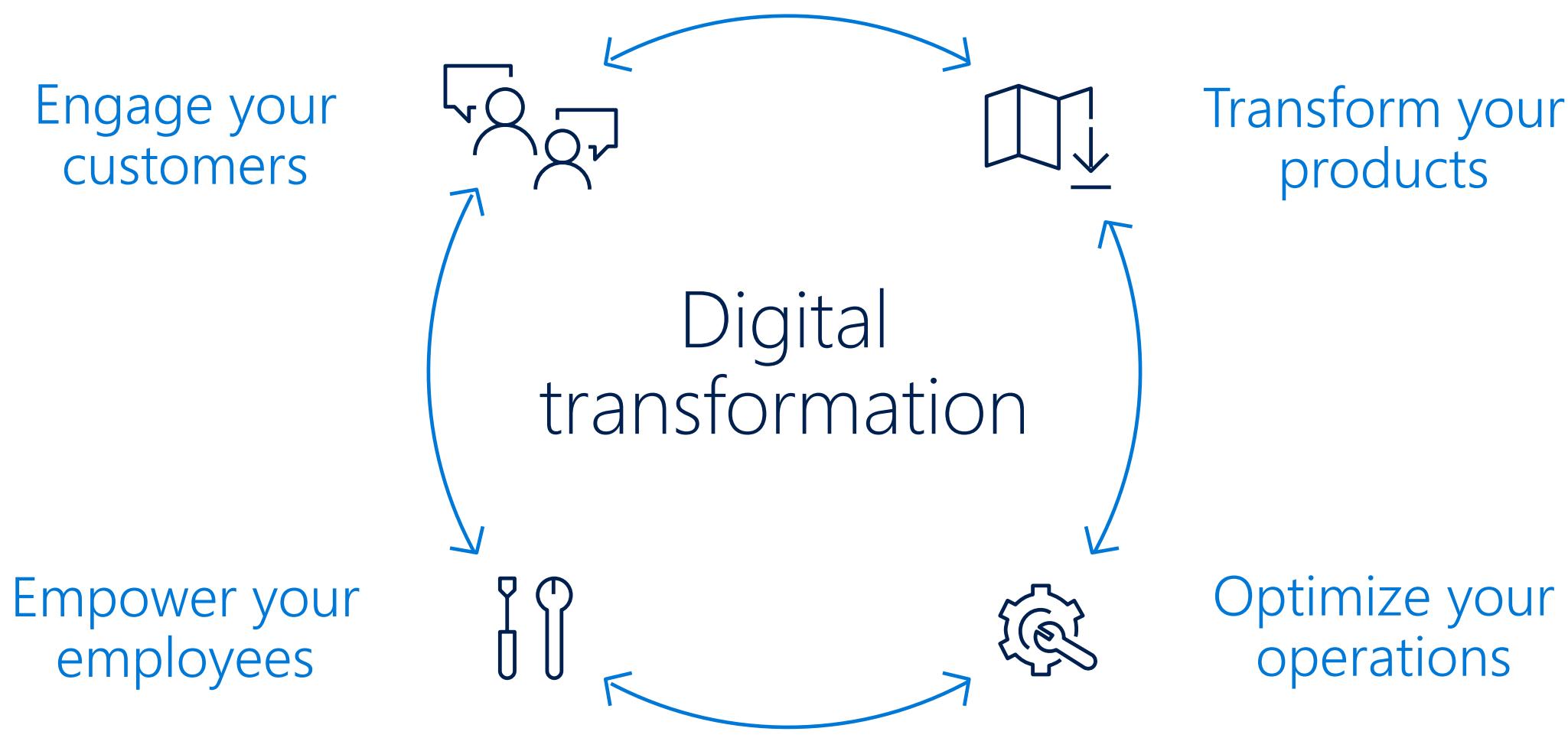
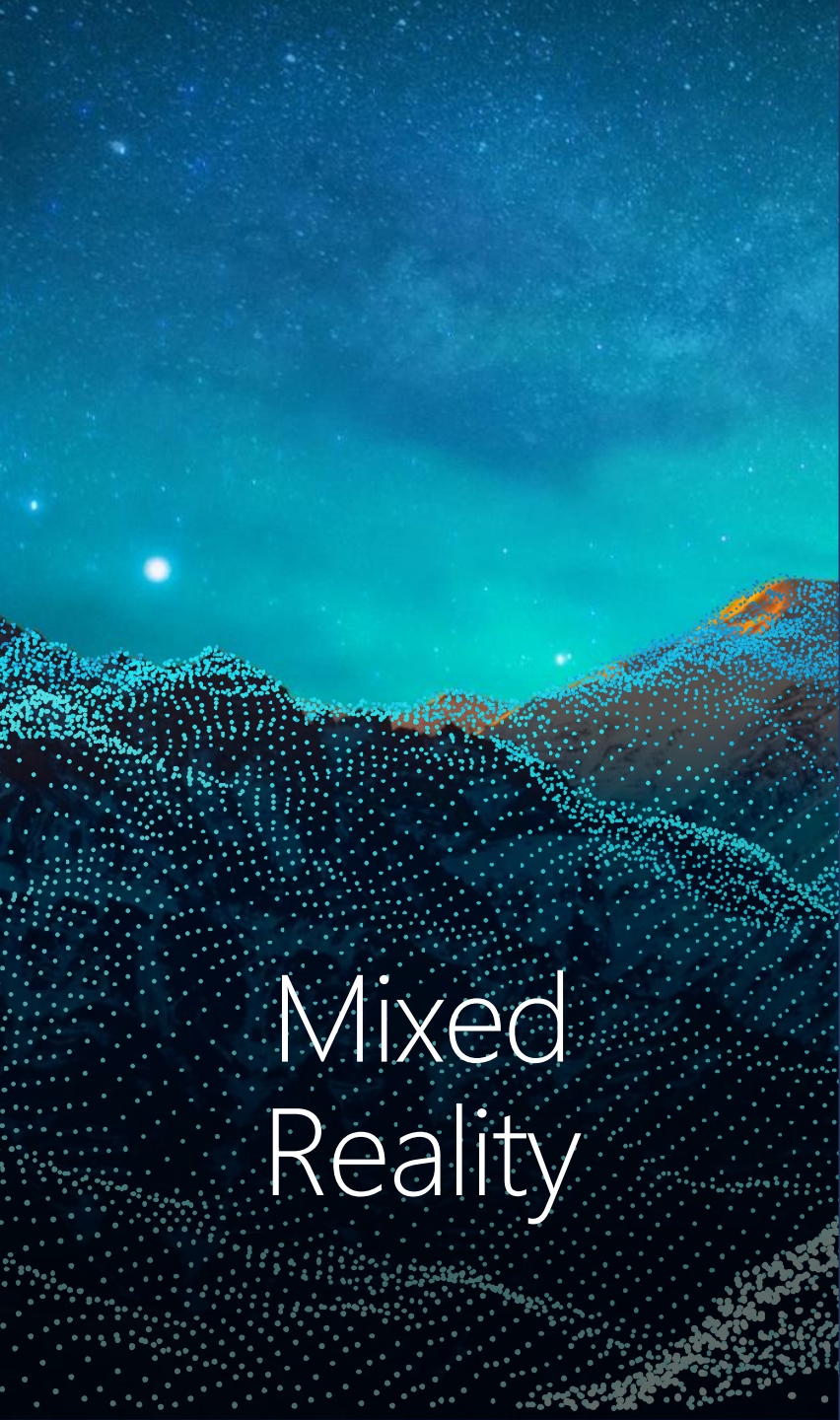




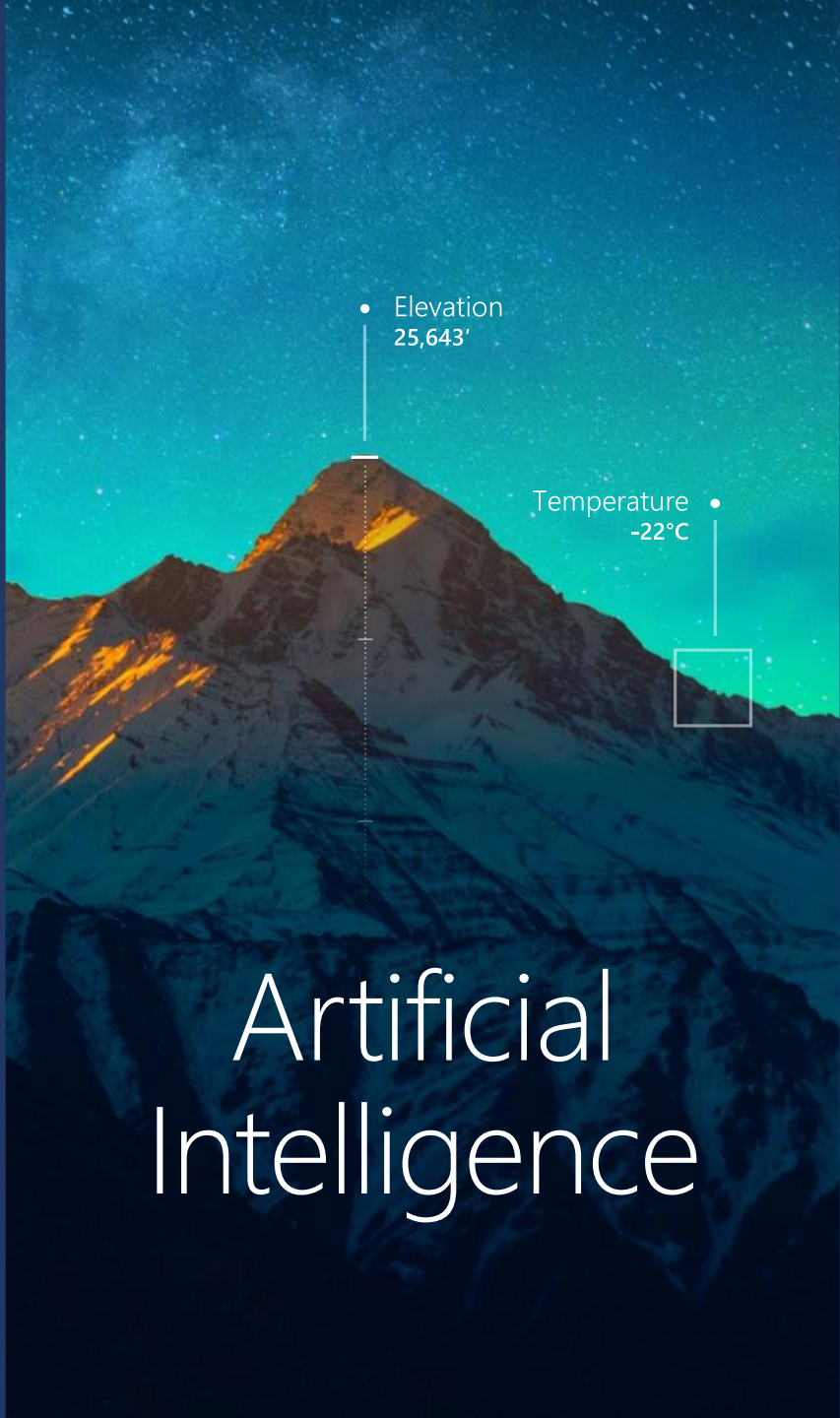
Microsoft AI

Transforming business with artificial intelligence

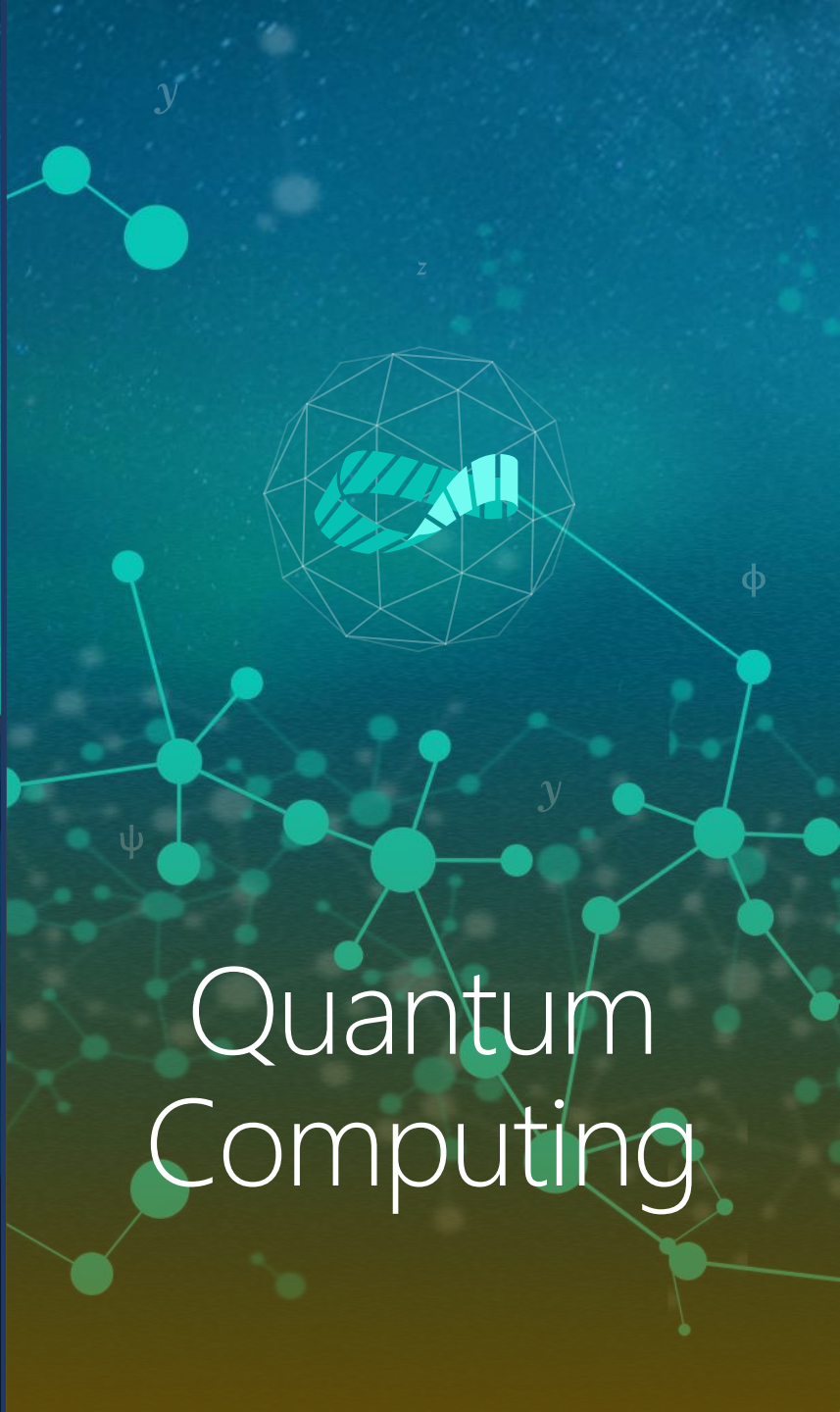




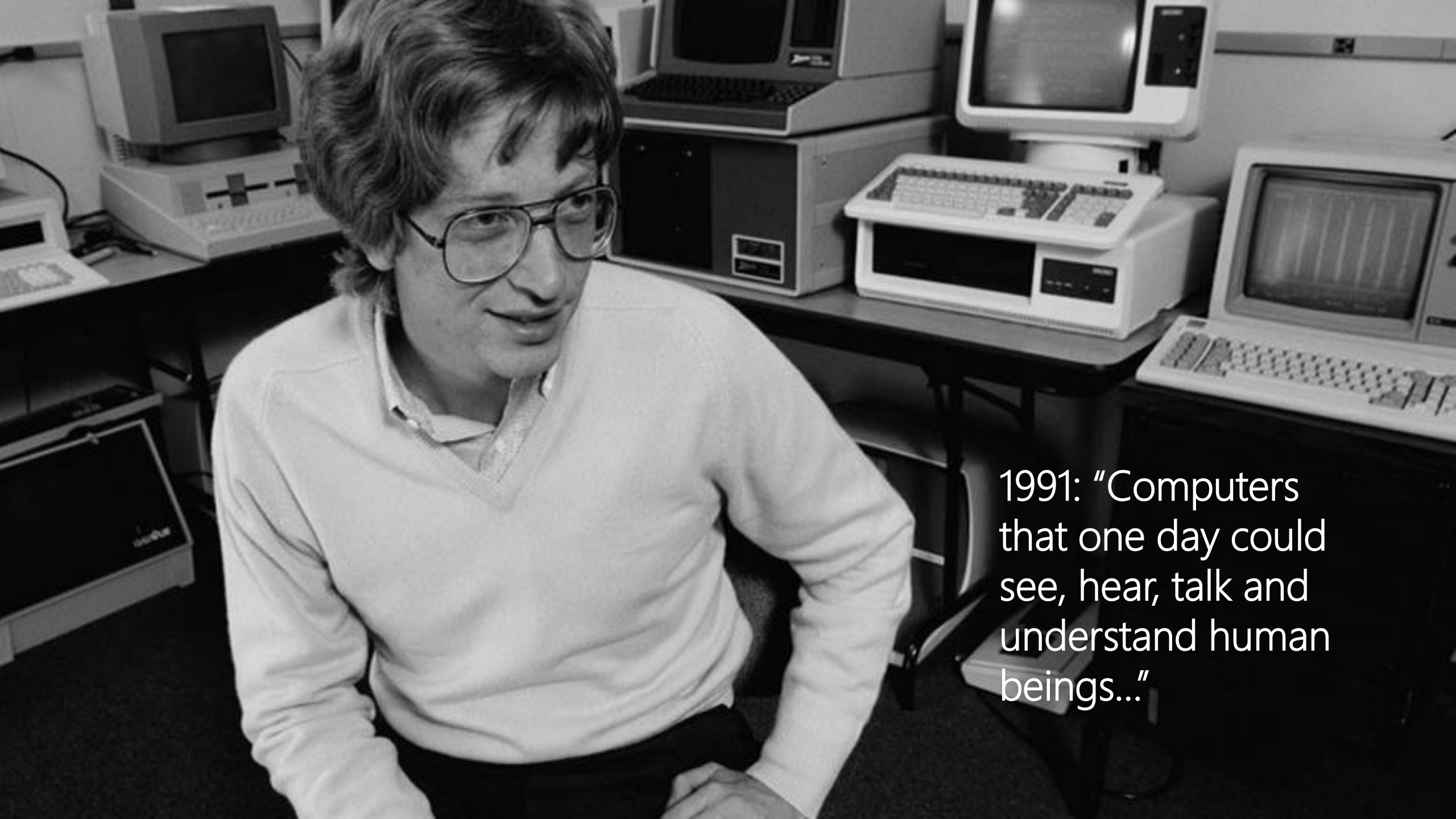
Mixed
Reality



Artificial
Intelligence



Quantum
Computing



1991: "Computers that one day could see, hear, talk and understand human beings..."

//

OUR GOAL IS TO **DEMOCRATIZE A.I.**
TO EMPOWER EVERY PERSON
AND EVERY ORGANIZATION
TO **ACHIEVE MORE**

//

SATYA NADELLA



2 Mil

kilometers
intra-datacenter fiber

72+

Tb per second
backbone

50

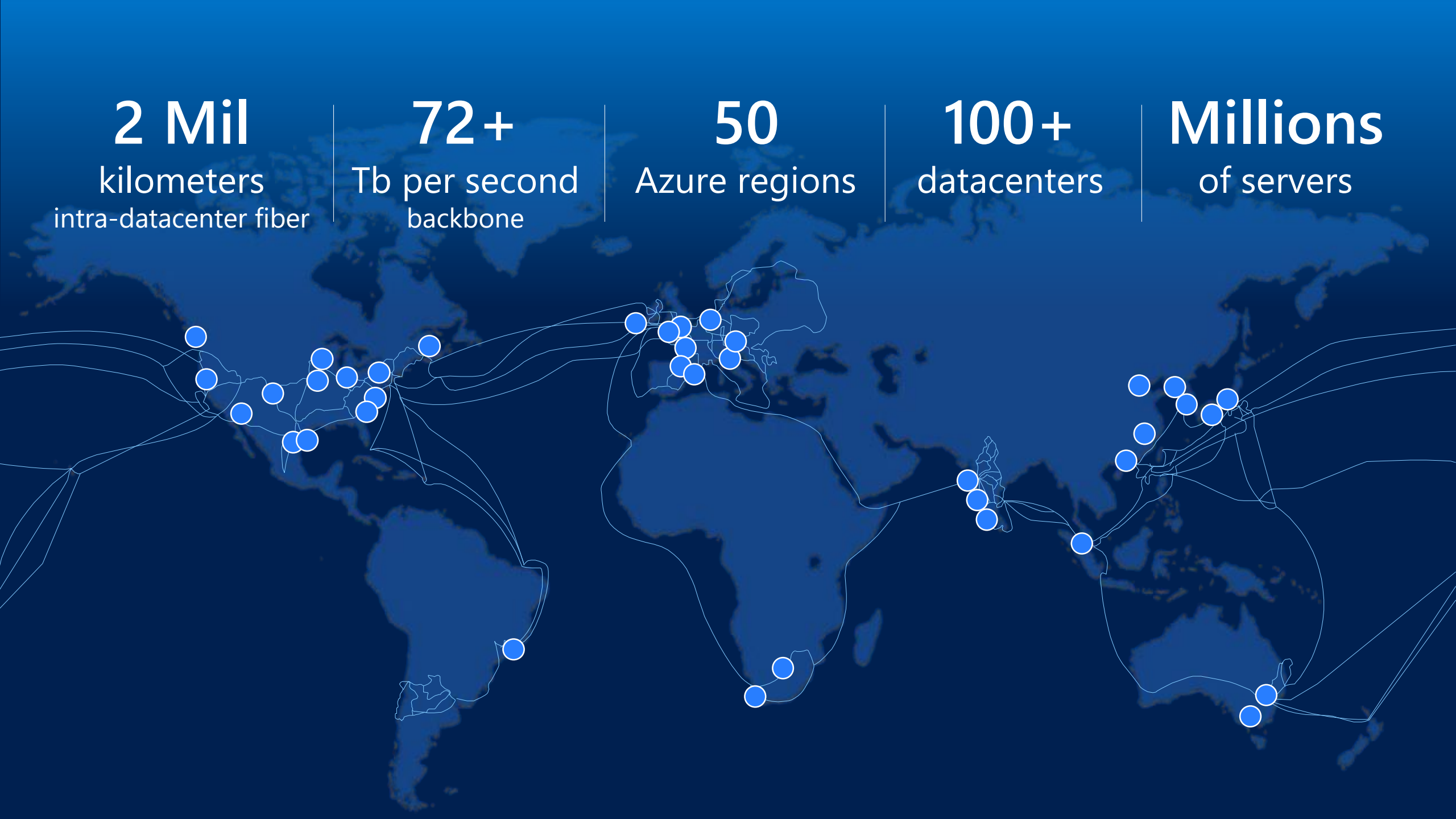
Azure regions

100+

datacenters

Millions

of servers







Under the sea, Microsoft tests a datacenter that's quick to deploy, could provide internet connectivity for years

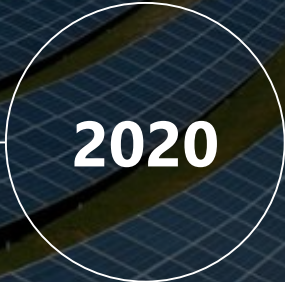
Commitment to sustainability



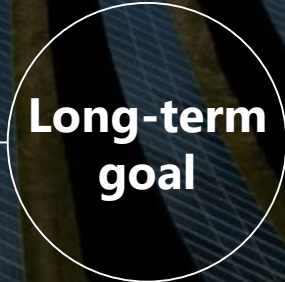
2012



2018



2020



Long-term goal

Carbon neutral

50% energy use from wind, solar & hydropower

60% energy use from wind, solar & hydropower

100% energy use from wind, solar & hydropower

More certifications than any cloud provider



Productive



Hybrid



Intelligent



Trusted

Global



ISO 27001



ISO 27018



ISO 27017



ISO 22301



SOC 1 Type 2



SOC 2 Type 2



SOC 3



CSA STAR self-assessment



CSA STAR certification



CSA STAR attestation

Industry



PCI DSS level 1



CDSA



MPAA



FACT UK



Shared assessments



FISC Japan



HIPAA / HITECH Act



HITRUST



GxP 21 CFR Part 11



MARS-E



IG Toolkit UK



FERPA



GLBA



FFIEC

Regional



Argentina PDPA



EU model clauses



UK G-Cloud



China DJCP



China GB 18030



China TRUCS



Singapore MTCS



Australia IRAP/CCSL



New Zealand GCIO



Japan my number act



ENISA IAF



Japan CS mark gold



Spain ENS



Spain DPA



India MeitY



Canada privacy laws



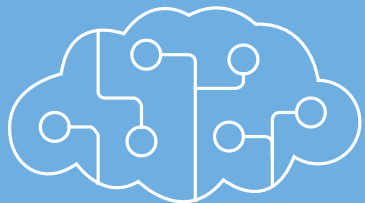
Privacy shield



Germany IT Grundschutz workbook

AI, ML and Deep Learning

Artificial
Intelligence



Machine
Learning



Deep
Learning



Image Recognition

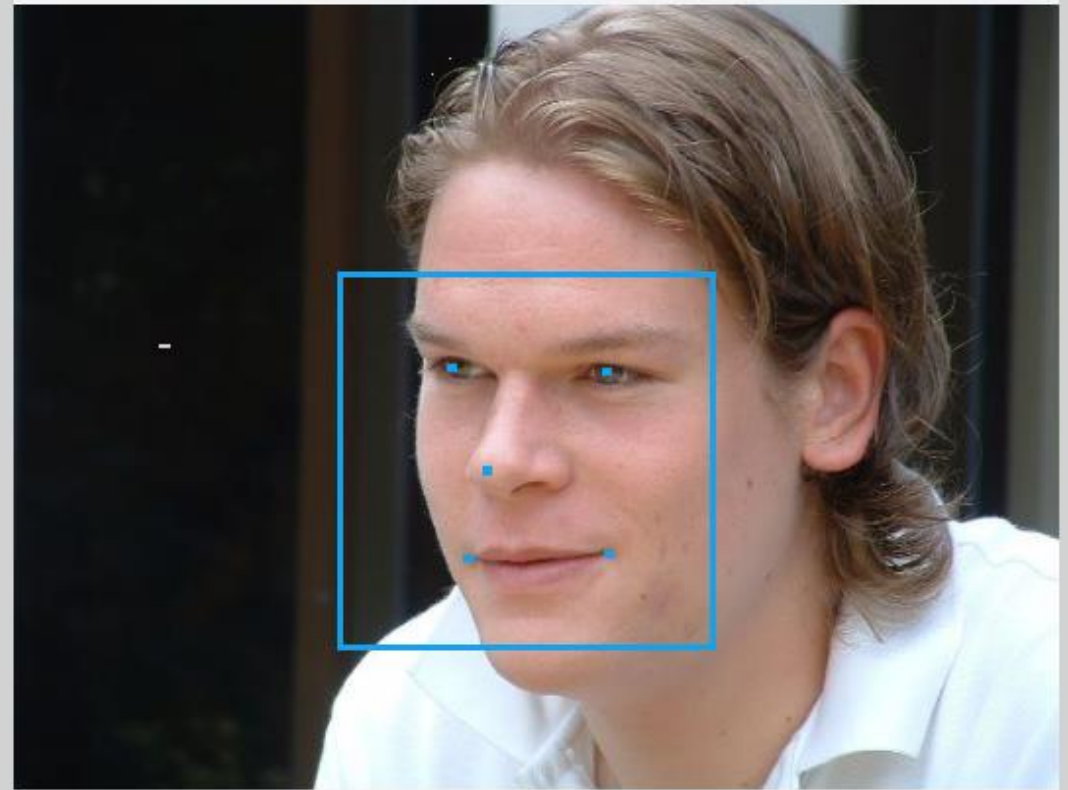
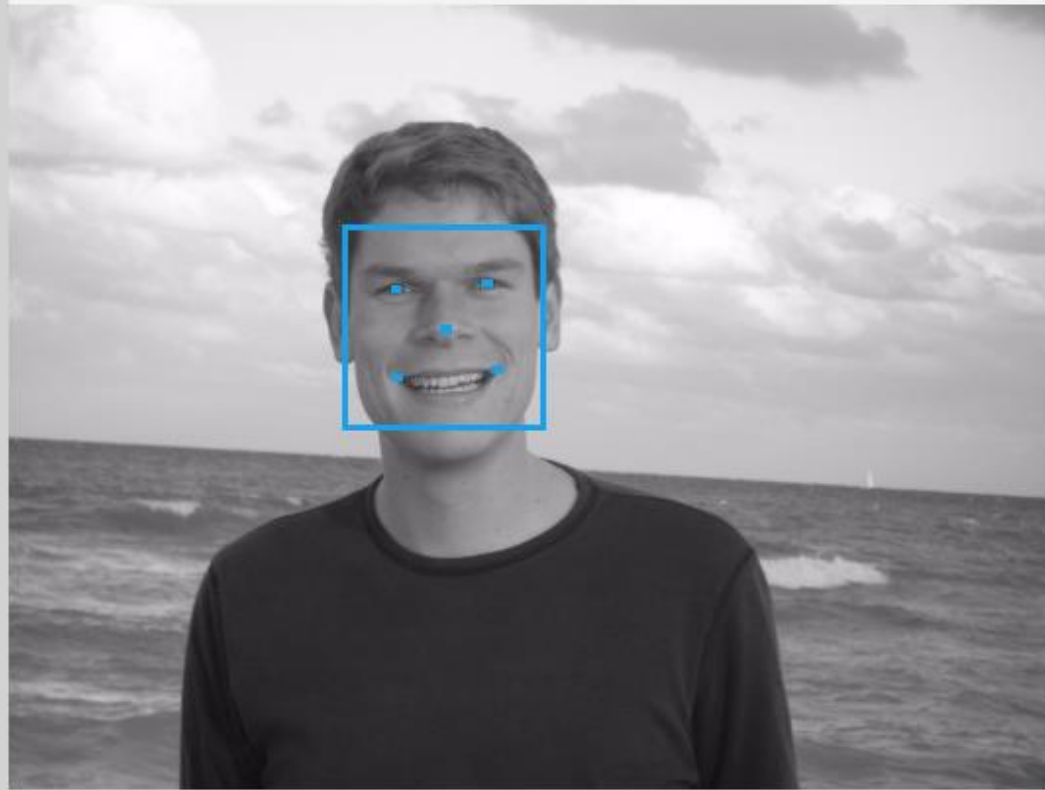


Image URL

Image URL

Verification Result:
The two faces belong to the same person.
Confidence is 0.657.

UBER

“Thousands of partners sign in to our platform every hour. The response time from the Face API is incredible, enabling us to verify our drivers without slowing them down.”

Dima Kovalev, Product Manager, Uber

[Face API](#)

[Read Case Study Here](#)

[See Video Here](#)





Bringing it all together

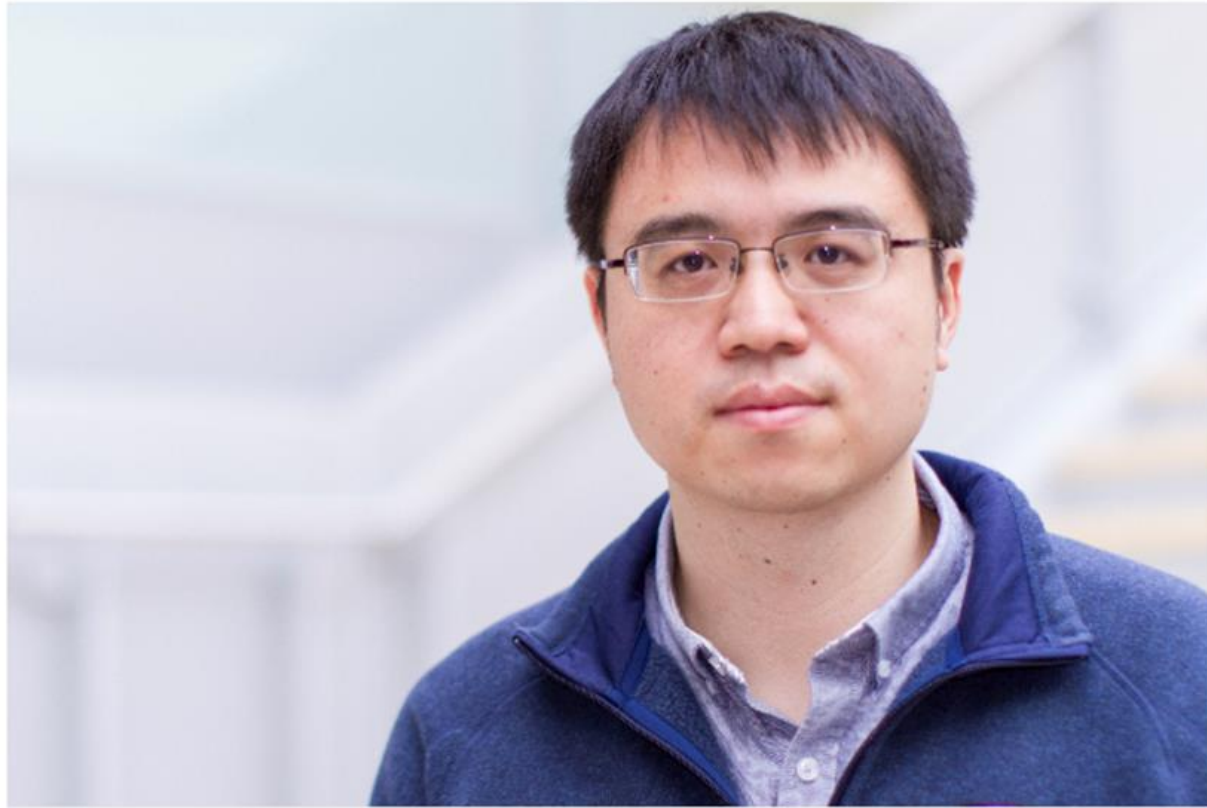
The Seeing AI App

Computer Vision, Image, Speech Recognition, NLP,
and ML from Microsoft Cognitive Services

[Read Blog Here](#)

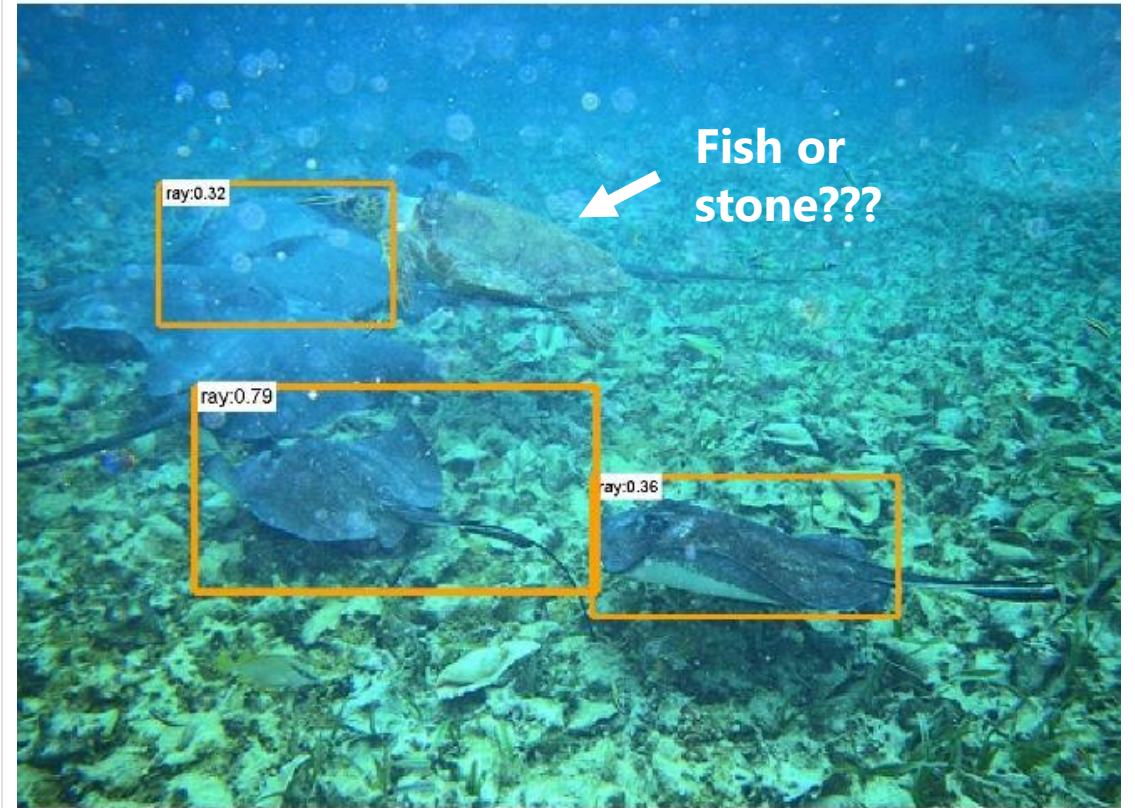
[Watch Video Here](#)

Microsoft researchers win ImageNet computer vision challenge



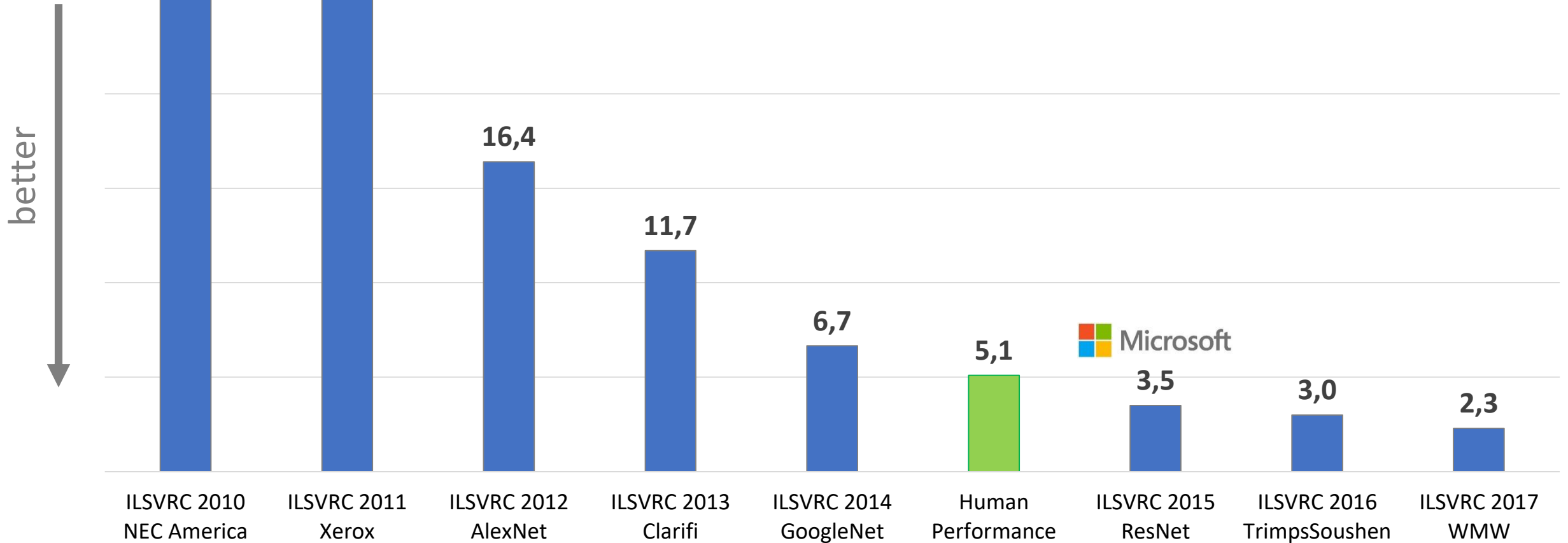
Jian Sun, a principal research manager at Microsoft Research, led the image understanding project. Photo: Craig Tuschhoff/Microsoft.

Posted December 10, 2015 By **Allison Linn**



Computer Vision Algorithm Performance: Last 8 years

ImageNet Challenge: Object Classification Top-5 error (%)



Microsoft AI advancements

96%

RESNET vision test
152 layers

5.1%

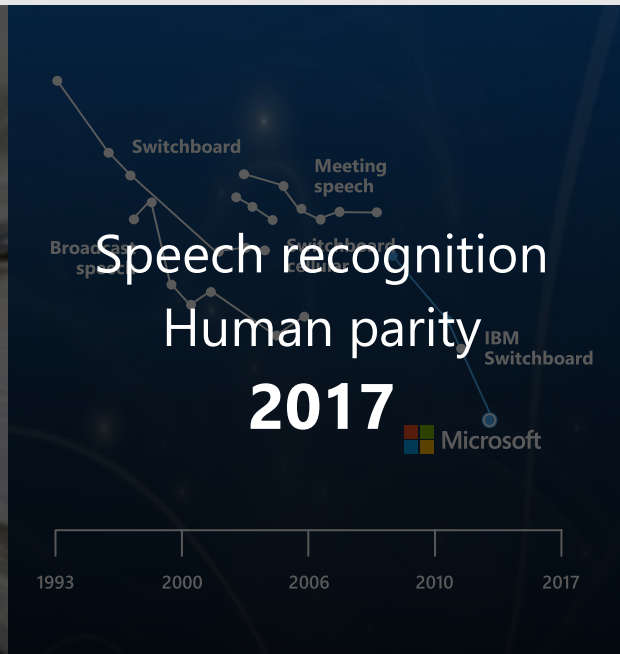
Switchboard speech
recognition test

88.493%

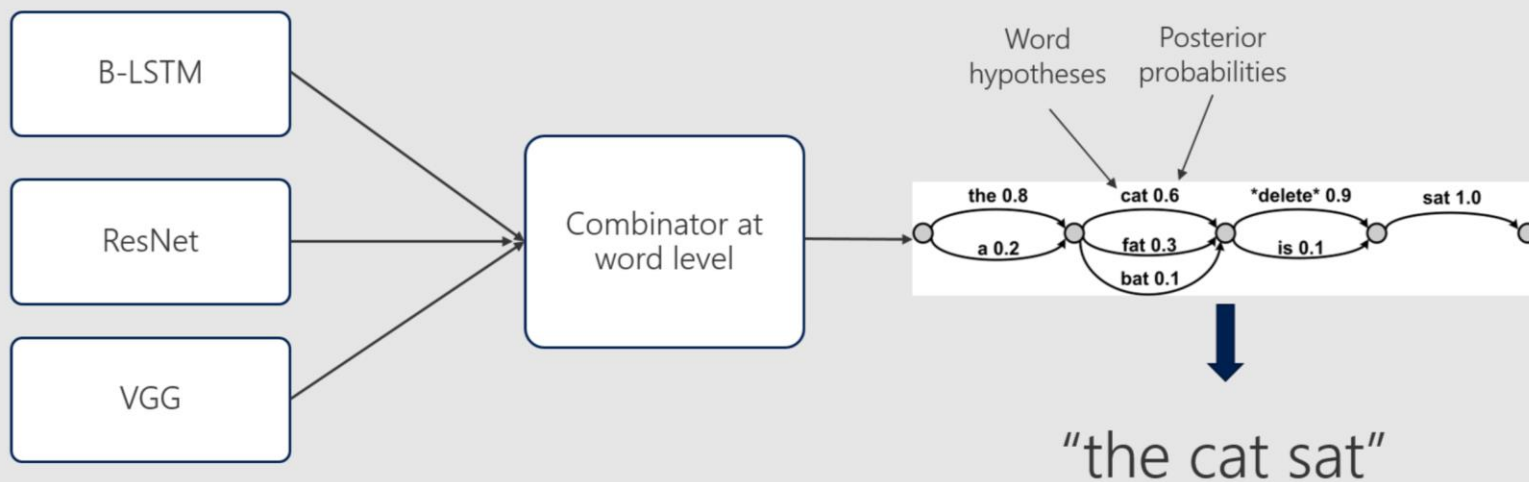
SQuAD reading
comprehension test

69.9%

MT
research system



Speech recognition human parity



Example 1



Example 2



Example 3



Example 4



DEMO

SpeechToText-WPF-Sample(wird ausgeführt) - Microsoft Visual Studio

Prozess: [18648] SpeechToText-WPF-Sampl

app.config

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <configuration>
3 <startup>
4 <support>
5 </startup>
6 <appSettings>
7 <add key="" value="" />
8 <add key="" value="" />
9 <add key="" value="" />
10 <add key="" value="" />
11 <!--
12 Enter
13 https
14 -->
15 <add key="" value="" />
16 </appSettings>
17 </configuration>
18
```

Microsoft.CognitiveServices.SpeechRecognition Example

Project Cognitive Services Speech To Text Sample

Speech Recognition Source:

- Use Microphone with ShortPhrase mode
- Use Microphone with LongDictation mode
- Use Microphone and intent detection (* LUIS registration is needed.)
- Use wav file for ShortPhrase mode
- Use wav file for LongDictation mode
- Use wav file and intent detection (* LUIS registration is needed.)

9e1f3a576ef34e12abf05c3860eee75d Save Key Delete Key Get Key

```
{
  "intent": "Fragen",
  "score": 0.008898091
},
{
  "intent": "None",
  "score": 0.00727646565
}
},
"entities": [
  {
    "entity": "benjamin",
    "type": "Vor und/oder Nachname",
    "startIndex": 27,
    "endIndex": 34,
    "score": 0.9666175
  },
  {
    "entity": "microsoft",
    "type": "Unternehmen",
    "startIndex": 74,
    "endIndex": 82,
    "score": 0.9181393
  },
  {
    "entity": "programmierer",
    "type": "Jobbezeichnung",
    "startIndex": 56,
    "endIndex": 68
```


Microsoft AI Portfolio

People



Agent

Cortana



Applications

Office 365
Dynamics 365
SwiftKey
Pix
Customer Service
and Support
Skype
Calendar.help



Services

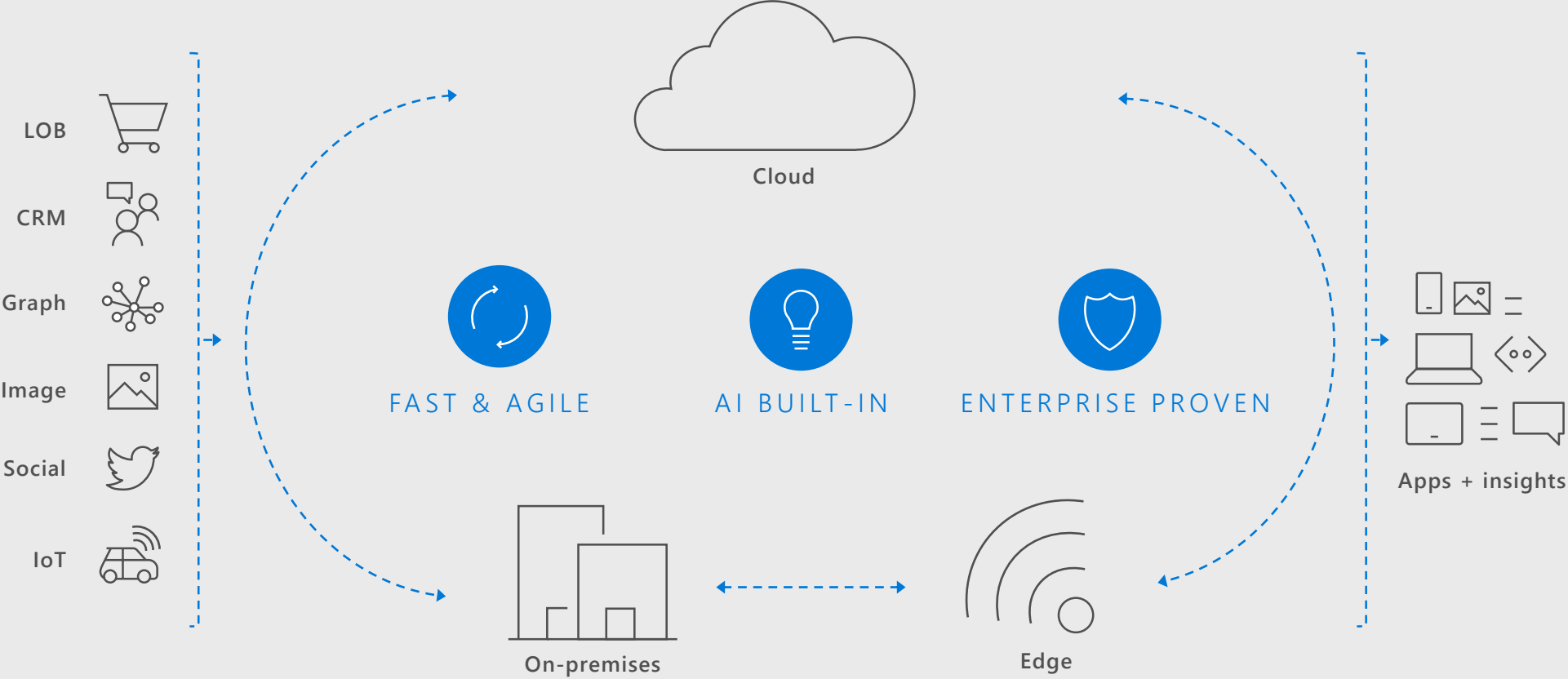
Cortana Intelligence
Cognitive Services
Bot Framework
Cortana Devices SDK
Cognitive Toolkit



Infrastructure

Azure Machine
Learning
Azure N Series
GPU/FPGA

MICROSOFT AI PLATFORM



Microsoft Cognitive Services

Give your apps a human side



Vision

Computer Vision
Content Moderator
Emotion
Face
Video Indexer



Speech

Bing Speech
Speaker Recognition



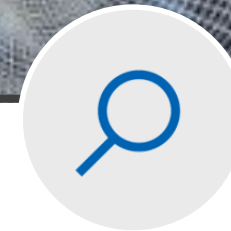
Language

Bing Spell Check
Linguistic Analysis
Text Analytics
Translator Text & Speech
Web Language Model



Knowledge

Academic Knowledge
Entity Linking
Knowledge Exploration
Recommendations
QnA Maker



Search

Bing Autosuggest
Bing Image Search
Bing News Search
Bing Video Search
Bing Web Search
Bing Entity Search



Labs

Project Prague (gesture)
Project Cuzco (events)
Project Johannesburg (routing)
Project Nanjing (isochrones)
Project Abu Dhabi (distance matrix)
Project Wollongong (location)

CUSTOMIZATION

Custom Vision Service

Custom Speech Service

Language Understanding

Custom Decision Service

Bing Custom Search

Why Microsoft Cognitive Services?

Easy

Roll your own with REST APIs
Simple to add: just a few lines of code required



Flexible

Integrate into the language and platform of your choice
Breadth of offerings helps you find the right API for your app
Bring your own data for your custom experience



Tested

Built by experts in their field from Microsoft Research, Bing, and Azure Machine Learning
Quality documentation, sample code, and community support



Conversation as a Platform



Microsoft Bot Framework

Your bots — wherever your users are talking.

Build and connect intelligent bots to interact with your users naturally wherever they are, from text/sms to Skype, Slack, Office 365 mail and other popular services.

Get started

```
public Message Post([FromBody]Message message)
```

```
if (message.Type == "Message")
```

Hey Pizza bot!



Hi Jeremy, the usual tonight?

No thanks, I'd like to try something new.



We have added 3 new items:

- 1) Hawaiian
- 2) BBQ Chicken
- 3) The Works

Option 3 please.



Shall I send this to your home?

```
break;
```

```
case OrderStatus.GetAddress:
```

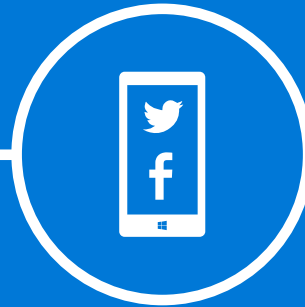


1980s: **PC**

- Desktop

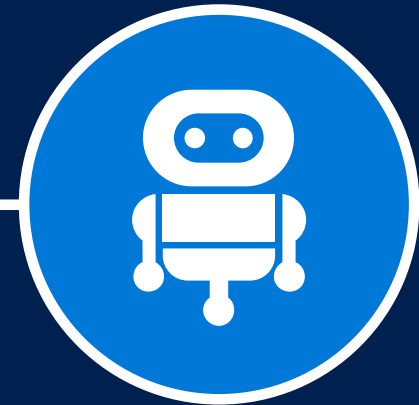
1990s: **Internet**

- Search
- User "visits" websites



2000s: **Mobile**

- Social
- User download apps from App Stores



The future: **Conversations**

- Natural language between people and technology
- Conversational canvas
- Bots and agents

VHV Allgemeine Versicherung AG has tested the bot technology to support the existing communication and distribution channels within the framework of a pilot project. Together with Microsoft Consulting Services, the company managed to create a productive bot within just a few weeks.

Bot Framework, Language
Understanding Intelligent Service (LUIS)

[Read case study here](#)





Customer need

Improve customer support and increase agent productivity

Impact

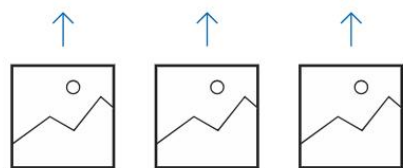
600 million technical support contacts per year

70% of support cases handled by AI

Visual Intelligence Made Easy

Easily customize your own state-of-the-art computer vision models that fit perfectly with your unique use case. Just bring a few examples of labeled images and let Custom Vision do the hard work.

[SIGN IN](#)



Upload Images

Bring your own labeled images, or use Custom Vision to quickly add tags to any unlabeled images.



Train

Use your labeled images to teach Custom Vision the concepts you care about.



Evaluate

Use simple REST API calls to quickly tag images with your new custom computer vision model.



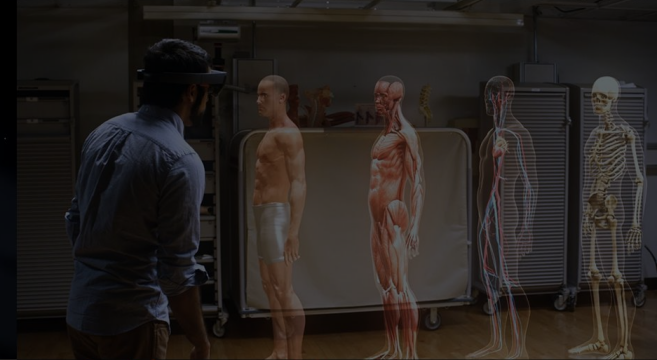
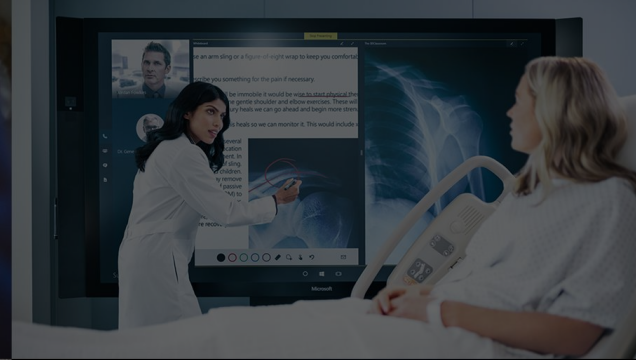
Drone-based electric grid inspector powered by deep learning

Challenge

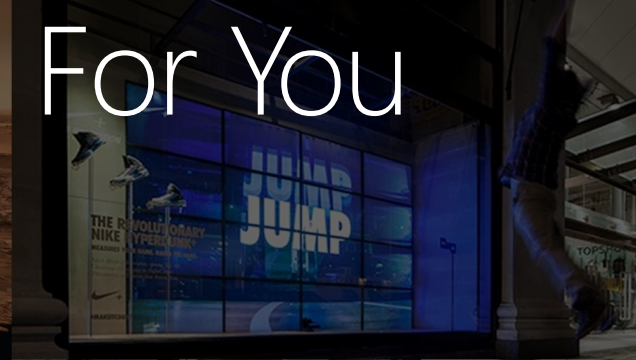
- Traditional power line inspection services are costly
- Demand for low cost image scoring and support for multiple concurrent customers
- Needed powerful AI to execute on a drone solution

Solution

- Deep learning to analyze multiple streaming data feeds
- Azure GPUs support Single Shot multibox detectors
- Reliable, consistent, and highly elastic scalability with Azure Batch Shipyards



Imagine What AI Can Do For You





95%

of Fortune 500 use
Microsoft Cloud