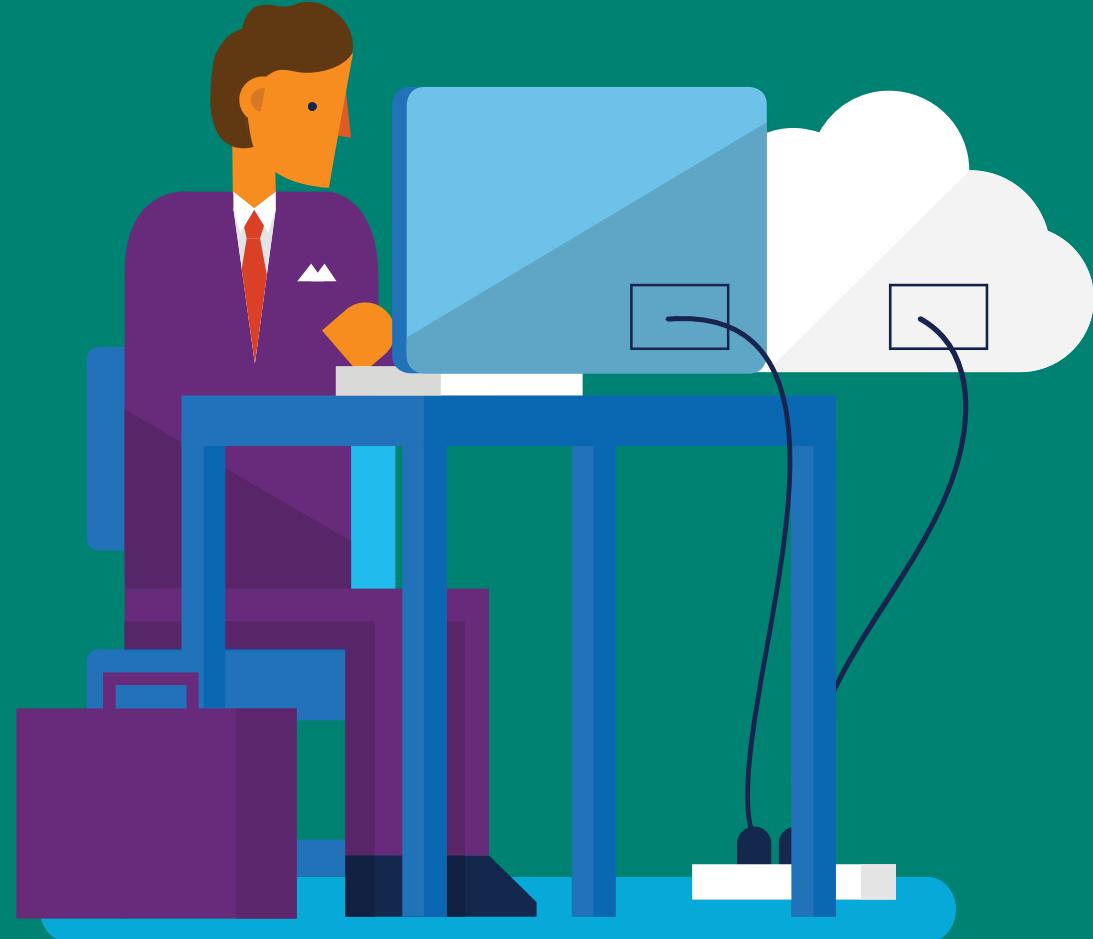


# Cognitive Services Intro

Aug 2017



# Content

- Vision, Mission and Value
- Cognitive Services Today and What's New
- Case Studies
- Q&A

# Our Vision, Mission and Values

# 解密微软智能云



# Goal & Value Propositions

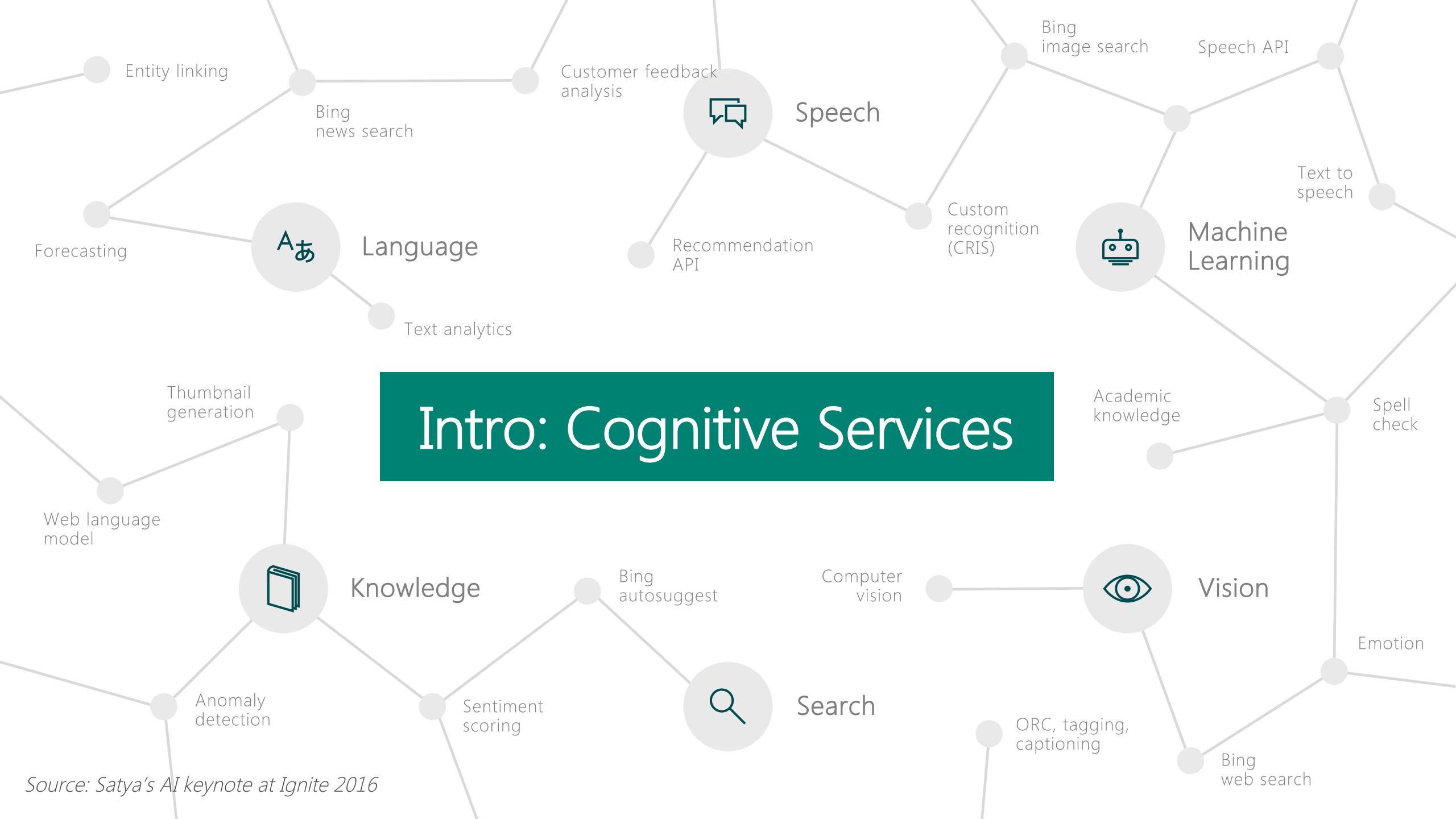
Goal	Serve as the key differentiator for Microsoft intelligent cloud by providing competitive Artificial Intelligence services including cognitive APIs, SaaS services, and customer solutions on top
AI Democratized	Microsoft will take the same intelligent capability in our products, democratize it and make it available as a set of APIs to every developer so everyone can use the same building blocks that we use to build Office, Cortana and Dynamics 365.
Cloud differentiator and customer delighter	Cognitive Services APIs are a natural delighter to our customers and an opportunity for Microsoft to accelerate the intelligent cloud

# Market – what do customers want?

Emerging Developers	Hobbyists	<ul style="list-style-type: none"><li>• Non-paid developers</li><li>• Code and develop in their free-time, use freemium, open source</li></ul>
	✓ Students	<ul style="list-style-type: none"><li>• Developers who major in computer science, formal training in OS and C++</li><li>• Line developers who attend boot camps, then fully-trained at a company, use freemium, open source</li></ul>
	✓ Startups	<ul style="list-style-type: none"><li>• Entrepreneurial developers who see technology as a way to disrupt a market</li><li>• Code and develop using freemium, open source</li></ul>
Enterprise Developers	✓ Innovation Teams	<ul style="list-style-type: none"><li>• Visionary thinkers who are tasked with bringing new ideas and innovative technologies into a business to create a competitive edge</li><li>• Advanced technical teams that build out new concepts</li></ul>
	✓ Corp Developers	<ul style="list-style-type: none"><li>• Coders, testers, solutions architects, who build and deploy business apps on various platforms including mobile</li><li>• Codes using C++, C#, VS, .NET, iOS, Android, Java....</li></ul>

## Our strategies:

- Build mindshare – short term
  - Drive for public community awareness (*targeting emerging developers*) and overall free trial usage
- Build market share – longer term
  - Engage with enterprise and ISV customers (*targeting enterprise developers*) and drive for lighthouse end-to-end solutions
  - Build SaaS and drive for customer solutions on top of Cognitive Services APIs





# 为什么选择微软认知服务？

易用

灵活

稳定

结合 REST APIs 推出您自己的产品

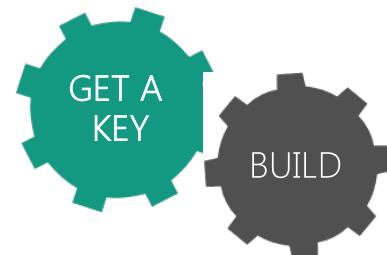
跨平台跨语言，与您的应用融为一体

由微软各领域的专家构建

仅用几行代码就可以实现

广泛的支持，让您更容易找到适合产品的API

全面的文档，示例代码和强大的社区支持



# 微软认知服务

让您的产品拥有人的智慧



## 视觉

让您的APP读懂图片和视频



## 语音

通过用户的声音识别身份，并可以将用户语音转发成您的APP可识别的信息



## 语言

处理文本，并学习怎样理解客户的意图



## 知识

轻松从网络、学术文章及本地数据库中获取丰富的知识



## 搜索

通过必应API获得海量网页、图片、视频及新闻

# 微软认知服务

让您的产品拥有人的智慧

## 认知服务API概况



### 视觉

计算机视觉 | 情绪识别 | 人脸识别 | 视频检测 | 内容监控服务



### 语音

语音识别API | 自定义智能识别 | 声纹识别



### 语言

必应拼写检查 | 语言理解 |  
语言分析 | 文本分析 | 翻译 | 网络语言模型



### 知识

学术搜索 | 实体链接 | 知识搜索 | 推荐



### 搜索

必应自动推荐 | 必应图片搜索 | 必应新闻搜索 | 必  
应视频搜索 | 必应网络搜索



# 计算机视觉API

## 分析图像

基于所输入图像的视觉内容分析出图像的视觉特征，如2000+物体标签及描述功能。新增中文支持

## 识别名人

识别自全球各地涉及商界、政界、体育、娱乐界的名人。新增中文支持

## 读取图片中的文字（OCR）

在图像中检测并识别文本

## 生成缩略图

生成高品质和高存储效率的缩略图



# 分析图像

图片类型：

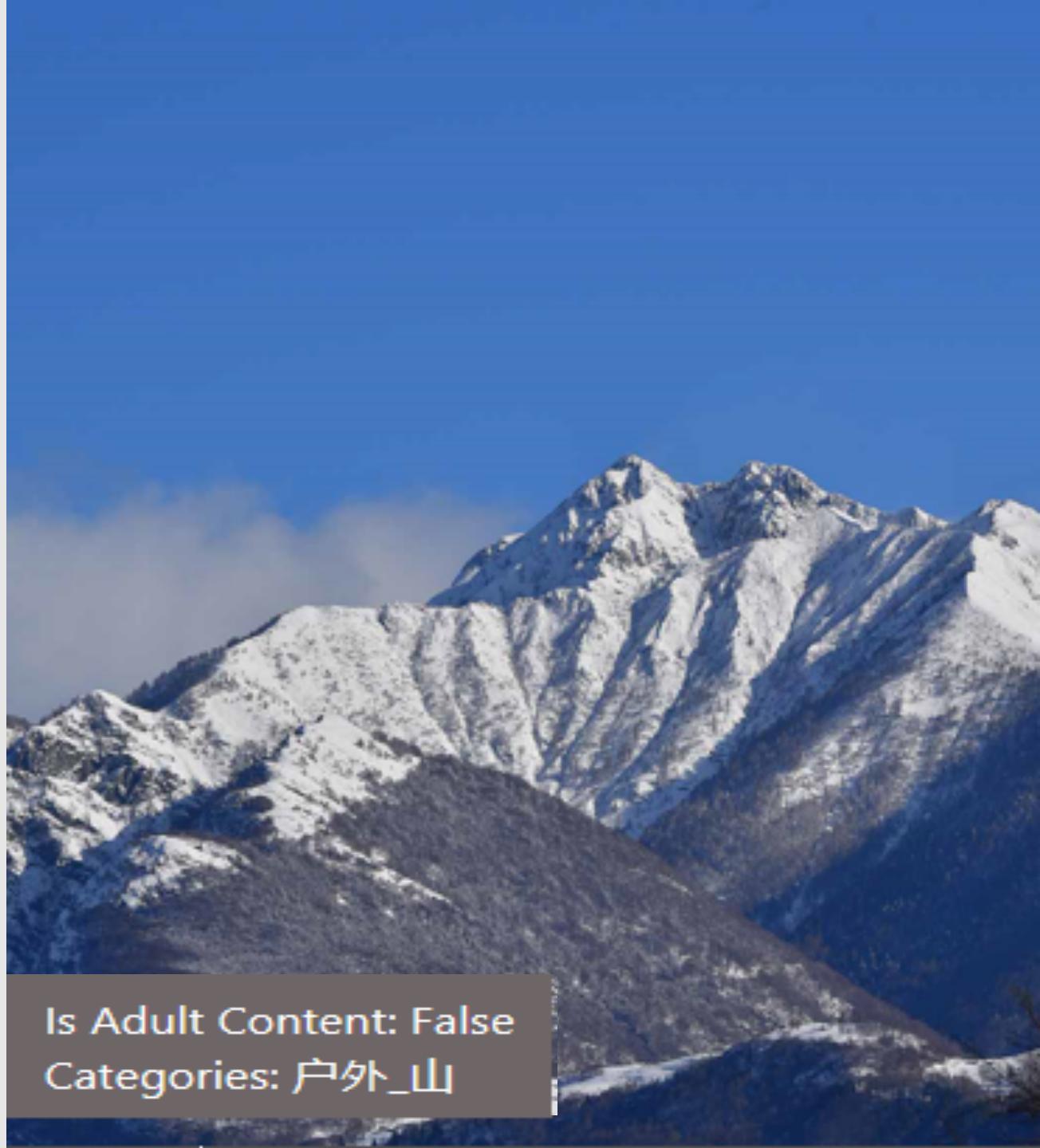
Clip Art Type	0 Non-clipart
Line Drawing Type	0 Non-Line Drawing
Black & White Image	False

图片内容：

Adult Content	False
Adult Score	0.014698461629450321
Tags	[{"name": "雪", "confidence": 0.9998654127120972}, {"name": "户外", "confidence": 0.9984318614006042}, {"name": "天空", "confidence": 0.9980937838554382}, {"name": "山", "confidence": 0.9864233136177063}, {"name": "自然", "confidence": 0.9375981092453003}, {"name": "坡", "confidence": 0.326749712228775}]

图片色值：

Dominant Color Background	Blue
Dominant Color Foreground	Grey
Dominant Colors	Blue
Accent Color	#325C99





# 识别名人

图片信息：

requestId: "14019463-ee8a-4626-806a-00f98f8b9c83",  
metadata: {"height": 225, "width": 300, "format": "Jpeg"}

图片名人：

name: "范冰冰",  
faceRectanagle: {"width": 66, "height": 66, "left": 122, "top": 45}

置信度：

confidence: 0.9896908

www.bbzhicom

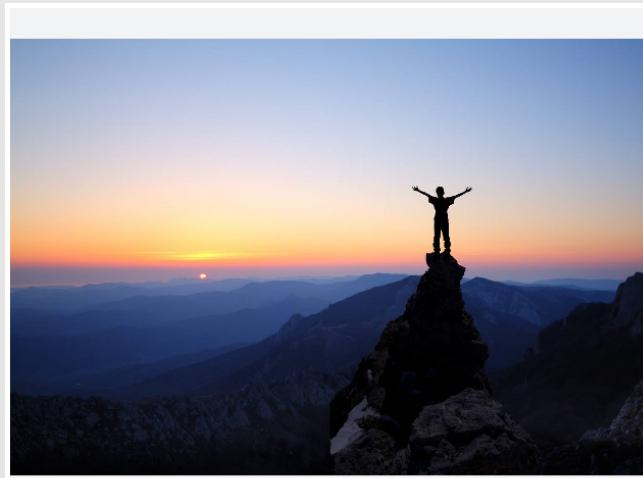
使用这个 ➔

fanbingbing



# 智能缩略图

开启智能缩略功能





# 人脸识别 API

## 人脸检测

检测图片中的人脸并识别属性

## 人脸验证

核对两张人脸是否属于同一个人

## 相似人脸搜索

从多张人脸中找出与所查人脸相似的人脸

## 人脸分组

根据识别的人脸进行分组

## 人脸辨识

支持按人脸存储收费，更多人数

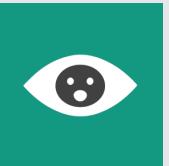
查询某张人脸，与提供的数据中的何人相匹配



# 人脸识别 API

```
"faceAttributes": {  
    "age": 43.4,  
    "gender": "male",  
    "headPose": {  
        "roll": 16.5, "yaw": 18.3, "pitch": 0  
    },  
    "smile": 0.009,  
    "facialHair": {  
        "moustache": 0.9,  
        "beard": 0.8,  
        "sideburns": 0.7  
    },  
    "glasses": "ReadingGlasses"  
}
```





# 情绪识别 API

## 识别图片中的人脸情绪

基于面部表情来检测感情

## 识别视频中的人脸情绪

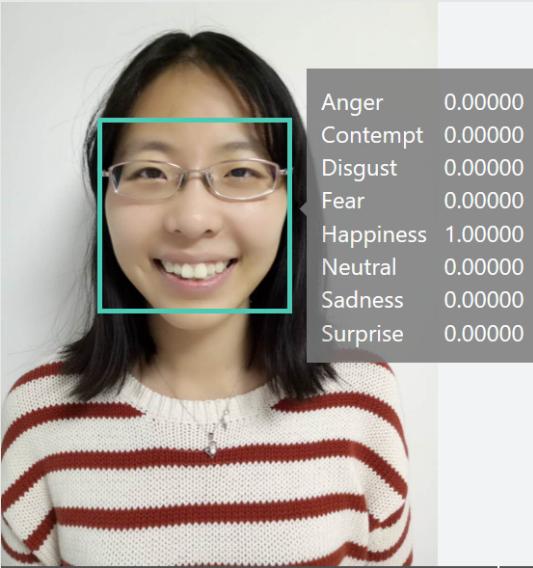
视频情感识别API可识别视频中人脸的表情，并返回不同表情的出现次数的计数总结

### 情感指数

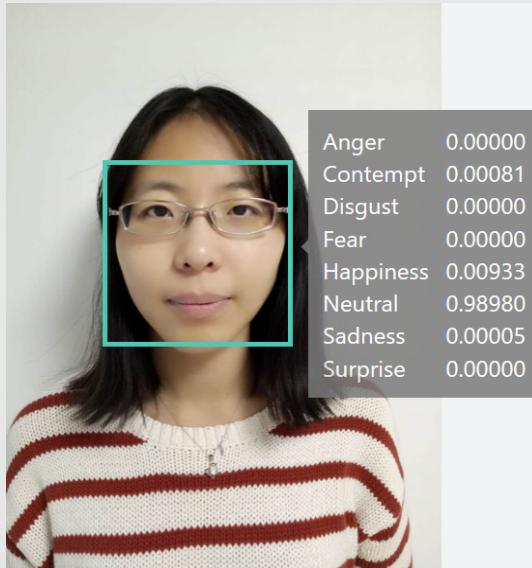
```
"scores": { "anger": 5.182241e-8,  
"contempt": 0.0000242813,  
"disgust": 5.621025e-7,  
"fear": 0.00115027453,  
"happiness": 1.06114619e-8,  
"neutral": 0.003540177,  
"sadness": 9.30888746e-7,  
"surprise": 0.9952837}
```



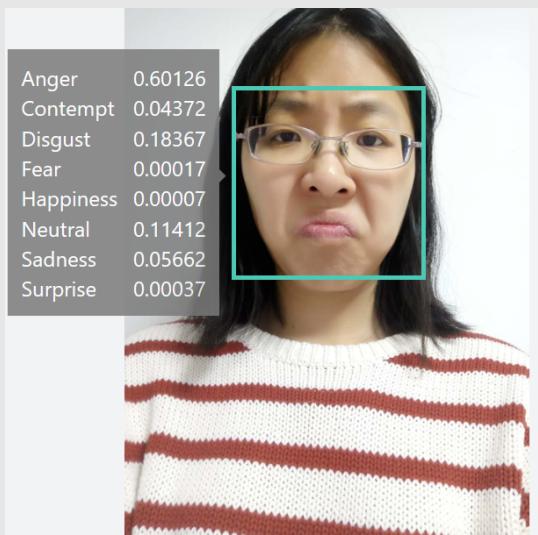
# 情绪识别



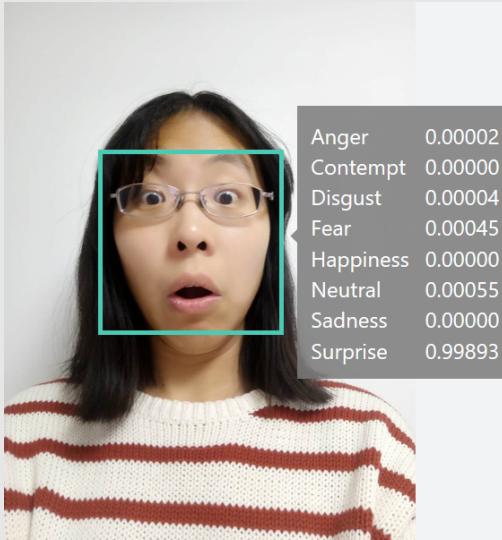
高兴



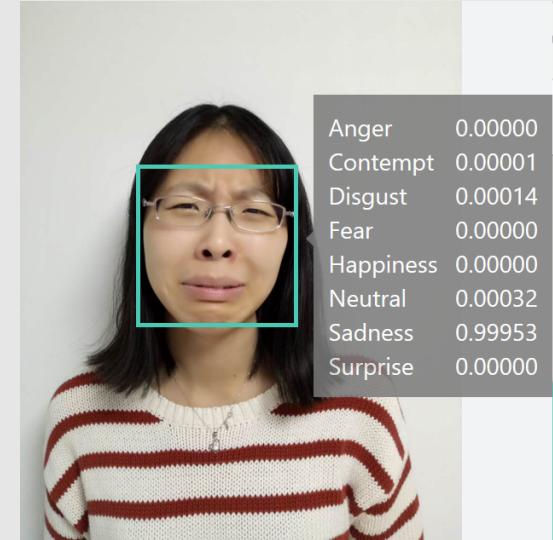
淡定



生气



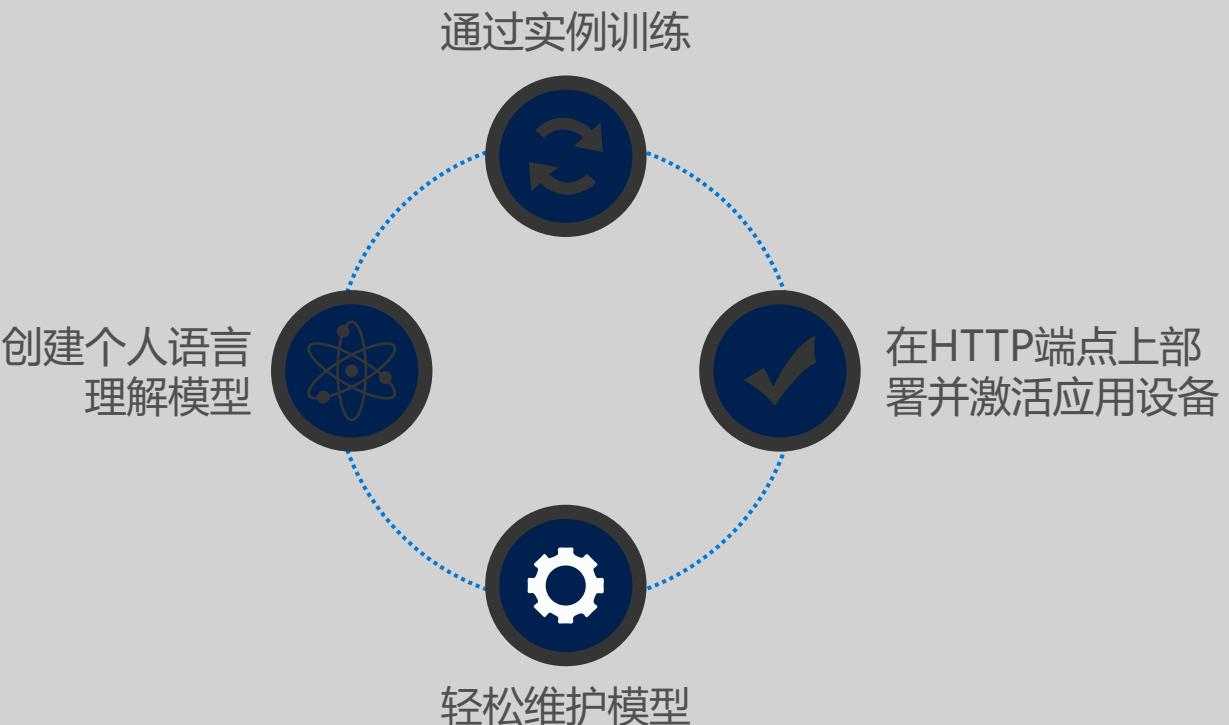
惊讶



难过

# 语言理解 服务介绍 (LUIS)

微软认知服务提供一种非常便捷的方式，让开发者可以为应用增加语言理解功能。



# LUIS 常见使用场景



## IoT（物联网）体验

不管是简单的声控灯，还是复杂的智能厨电，亦或是智能售卖机，甚至人脸识别门禁，LUIS都可以帮助轻松建立这些IoT应用。



## 聊天机器人

LUIS集成了微软Bot Framework和Slack。无论开发人员使用何种设备或技术，都可以借此构建和链接人工智能机器人。



## 虚拟助理

LUIS使用来自必应和小娜的预建模型来帮助开发者在他们的APP上轻松添加个人助理功能。

# LUIS的优势

## 简单:

使用简单UX编辑器创建语言理解模型



为您的APP建立模型去更好的理解用户意图，如“开灯”；或者实例如“开始慢跑、散步、远足、骑行”。以深入的性能可视化来调整你自己的模型

## 快捷:

只用几秒钟即可在你的APP上添加会话智能



LUIS拥有强大的会话引擎，使您只需短短几步，即可在任何会话中维护上下文关系，并编辑和执行。

## 灵活:

可以在任何设备上激活模型



无论是您的手机，平板电脑或是其他任何可接入互联网的设备，语言理解模型都可以在其APP上激活。

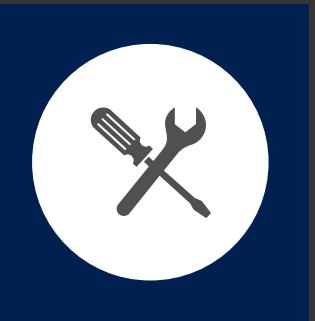
## 专业:

充分利用微软研究院专业技术



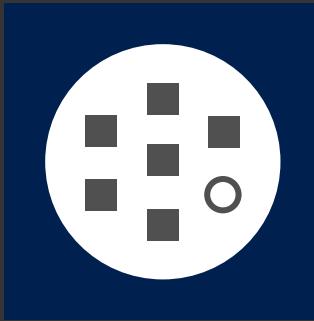
LUIS充分利用微软研究院最前沿的人工智能技术。

# 核心功能



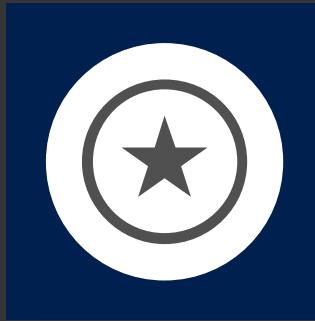
## 轻松创建 语言理解模型

LUIS提供了一组易用的工具可以完整提取出复杂的技术，让您仅用简单几步就可启动运行。



## 主动学习

这一突破性的功能使LUIS可以根据发送给它的话语进行自检并修正以提高精准度。



## 行为实施

LUIS可以实施由各类渠道引发的行为。（例如HTTP, 新闻, 股票等）



## 会话支持

如果用户提出了缺失必要参数的查询，LUIS会根据情况发起相关补充提问。

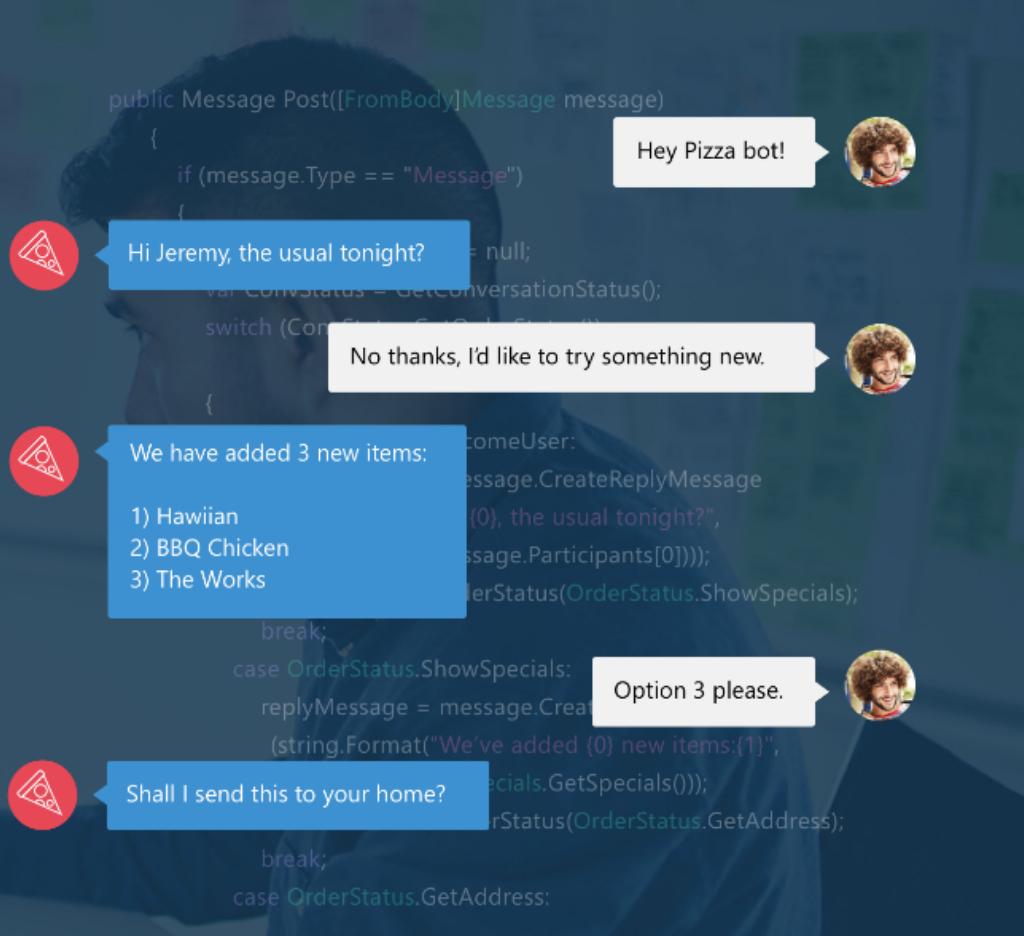
# Microsoft Bot Framework

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")
    {
        var convStatus = GetConversationStatus();
        switch (convStatus)
        {
            case ConversationStatus.Null:
                replyMessage = message.CreateReplyMessage("Hey Pizza bot!");
                break;
            case ConversationStatus.Hi:
                replyMessage = message.CreateReplyMessage("Hi Jeremy, the usual tonight?");
                break;
            case ConversationStatus.NewItems:
                replyMessage = message.CreateReplyMessage("We have added 3 new items:");
                replyMessage.AddText("1) Hawiian");
                replyMessage.AddText("2) BBQ Chicken");
                replyMessage.AddText("3) The Works");
                break;
            case ConversationStatus.ShowSpecials:
                replyMessage = message.CreateReplyMessage(string.Format("We've added {0} new items:{1}", OrderStatus.GetSpecials()));
                break;
            case ConversationStatus.GetAddress:
                replyMessage = message.CreateReplyMessage("Shall I send this to your home?");
                break;
        }
    }
}
```



# 创建一个BOT

从您的业务出发  
添加BOT界面

- BOT创建器SDK 或者最新的Azure Bot Service
- 支持不同模型

内嵌表格及卡片  
简单的菜单  
自然语言

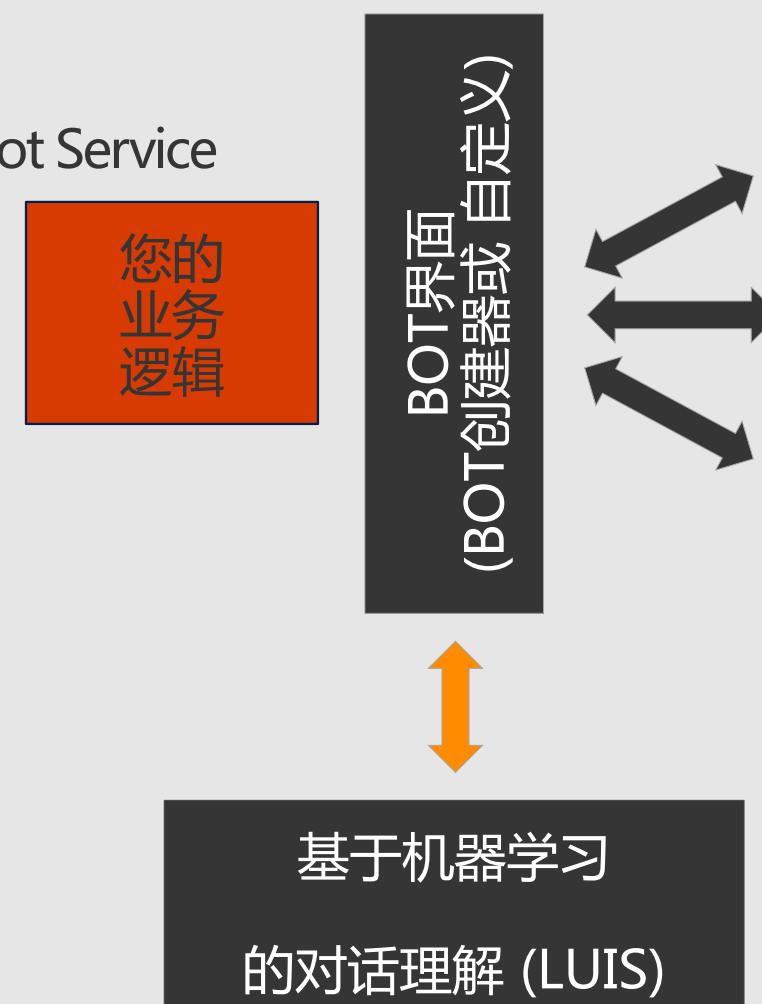
机器学习的服务需求

- 认知服务/语言理解智能服务

连接到您的用户

- BOT框架连接器

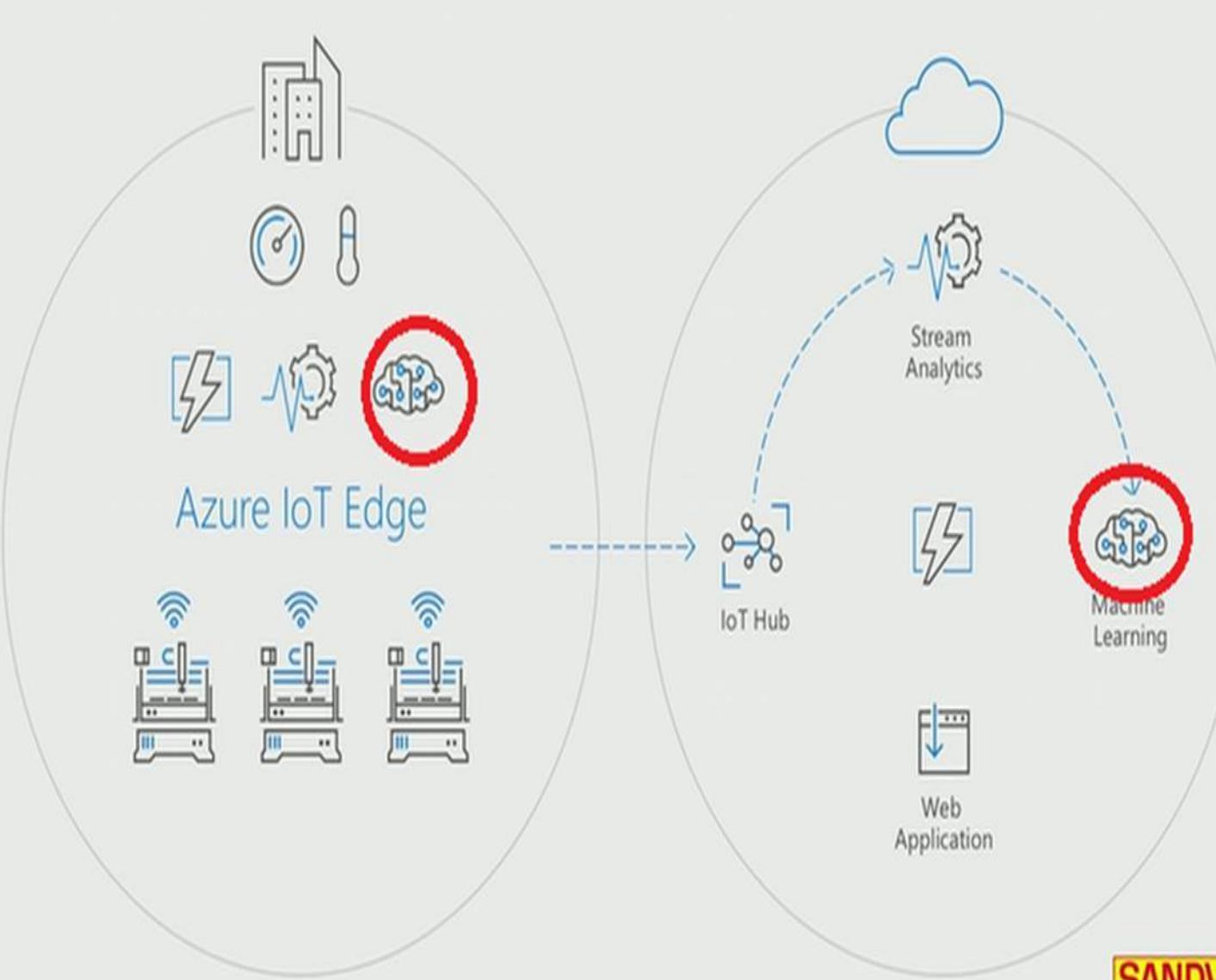
学习与循环



	Text/SMS
	Office 365 email
	Skype
	Facebook Messenger
	Slack
	Kik
	GroupMe
	Telegram
	Web chat
	Direct line

# What's New ...

# @Build 2017



# New APIs Announced

Early Preview Release of:

- Custom Vision Service

Easily customize your own state-of-the-art computer vision models for your unique use case

- Bing Custom Search

Leverage Bing Custom Search to build a search that fits your needs with powerful ranking

- Custom Decision Service

Uses reinforcement learning in a new approach for personalizing content

- Video Indexer

Unlock video insights by making content more discoverable and more engaging

# Cognitive Services Labs

Cognitive Services Labs is a launch vehicle for potential Cognitive Services that are still in the early phase of their product development. These services provide developers with an early look at emerging Cognitive Services technologies, for early adopters who do not need market-ready technology. Via Labs, developers can discover, try and provide feedback on new Cognitive Services technologies before they are generally available.

Labs at Build	
Gesture Recognition	<b>Project Prague.</b> SDK to Incorporate gesture-based controls into your apps. Quickly define and implement customized hand gestures, creating a more natural user experience. Limited availability at launch.
Event Knowledge Service	<b>Project Cuzco.</b> API to help developers find events associated with Wikipedia entities. Begin with a Wikipedia entity, and receive a list of related events organized by time.
Truck routing	<b>Project Johannesburg.</b> API to calculate route logistics for with deeper location intelligence to account for specific enterprise requirements. IE: weight, height length, hazardous materials, etc.
Isochrones	<b>Project Nanjing.</b> API to calculate isochrones - time and distance-based recommendations for enterprise route optimization.
Distance Matrix	<b>Project Abu Dhabi.</b> API to create distance matrices, enabling you to calculate a histogram of travel times, and serve as stepping stone for enterprise route optimization.
NavJoin	<b>Project Wollongong.</b> API to help 'score' the attractiveness of a location, based on how many of a particular amenity are within a specific distance. Ex: restaurants, parks, transit stops.

# 客户案例



UBER



WILD WORLD



dutchcrafters

Amish Handcrafted in America

STARSHIP  
COMMANDER



allrecipes.com®



pivothead®

III E O

Orchestra

ziosk

P

# 认知服务人脸识别API增强Uber平台安全

## 挑战

- 我们需要知道我们通过审核筛查的人和方向盘后面的司机是同一个人

## 解决方案

- 适用认知服务的人脸 API 来验证司机的自拍照片

## 结果

- 更加安全
- 令人满意的性能，精确度，和可扩展性

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

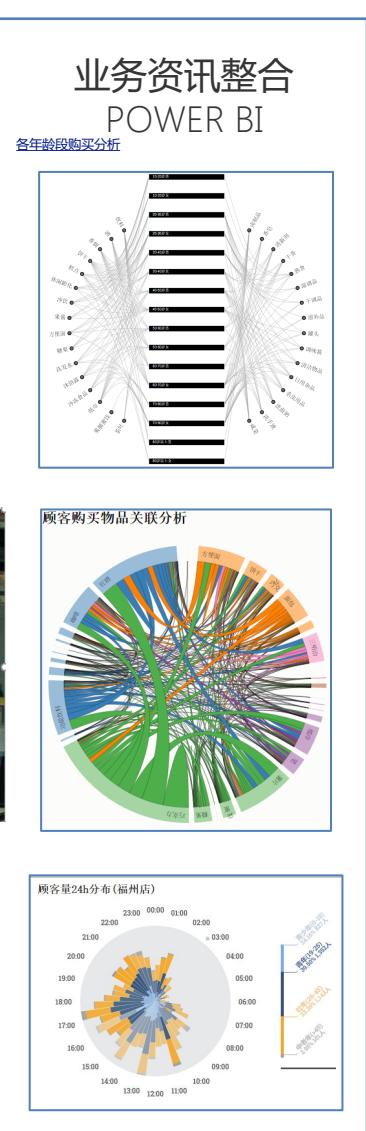
# Gump Come – Vending machine that knows who you are



# 厦门见福连锁管理有限公司



- 全连锁导入~1,000 门店
- 单店日均客流 400 人
- 每日40万+人脸实时识别



## 消费者跟踪

通过摄像头配合人脸跟踪识别，无接触的实现对门店拜访和消费的数据采集



识别干预管理  
提供强大的后台消费者识别干预，提升识别精度



## 收银机整合

整合收银机，将当前消费的客户生理特征和消费流水整合



大数据分析  
对消费者生理特征和消费行为进行关联分析，洞察消费者的偏好和态度



## 业务

将消费者行为数据和企业CRM、进销存系统数据整合，提供业务系统更多数据细节



不友好名单  
将在单个门店有过不受欢迎人员的人脸信息同步给所有门店

解决方案及实施供应商



上海南洋万邦软件技术有限公司  
SHANGHAI NANYANG WANBANG SOFTWARE TECHNICAL CO., LTD.

技术服务供应商



知鱼科技  
TECH FISH

# 白山云科技



白山云科技  
BAISHAN CLOUD

## 智能

- 基于人脸、场景的深度分析

## 合规

- 满足鉴黄监管要求与合规化

## 实时

- 实现用户访问直播内容的流畅体验

# 棠棣科技：棠宝机器人



一名戴眼镜的男士正在  
跟机器人交流



一名年轻的女士在  
跟棠宝聊天





儿童锁

为孩子打造保护墙



# 寻助 宝贝回家

- 225562位爱心人士加入志愿者协会
- 1704人通过“宝贝回家”找到亲人
- 尚有家寻宝贝31436人，宝贝寻家25552人
  
- 微软认知服务 - 人脸识别技术
- 1-2秒匹配照片库中几万张照片
- 27 个面部重要特征点识别
- 云端部署，跨平台、跨地域访问





Microsoft