Universidad Tecnológica del Perú

Ing. Pablo Angel Piovano

Ingeniero en Computación, con más de 12 años de experiencia en el sector TI, liderando equipos para el desarrollo de soluciones de Software, principalmente utilizando tecnologías Microsoft.

@ppiova

ppiova

Microsoft Azure AI Latam South

- Meetups mensuales
- Excelentes Post
- Muchas novedades
- Conocer personas que quieran aprender de AI

AZURE AI LS
Microsoft Community

@azureails

[MS Azure AI Latam South | Facebook]

¿Por qué aprender desarrollo Mobile?

-El mundo se volvió Mobile

-Cada vez se utilizan más los dispositivos

-Video llamadas

-Trabajo cotidiano

-Como medio para estudiar

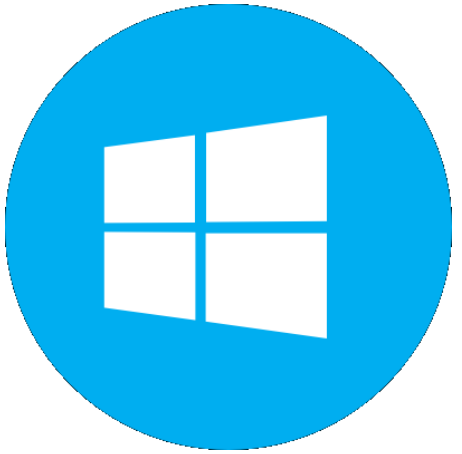
-Redes Sociales

-Games!!!

Desarrollo Nativo
¿Qué debemos saber?

- Mac OS X
- Xcode
- Objective-C
- Swift
- IOS SDK
- Apple Tools

- OS
- Android Studio
- Java
- Kotlin
- Android SDK
- SDK Tools



- Windows OS
- Visual Studio
- C#
- F#
- .NET Framework
- UWP

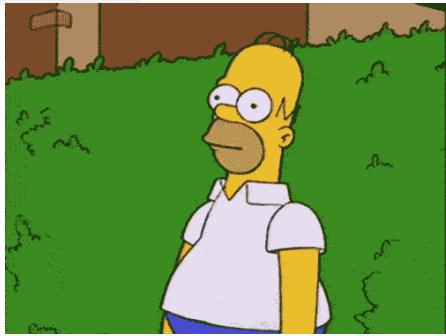
Mobile Complexity

On Mobile, Quality is Hard

- **5** OS versions
- **20** devices
- **20** languages
- **35** locales
- **6** screen sizes

- **9** OS versions
- **6** Screen configurations
- **27** screen sizes
- **39** languages

- **57** locales
- **15** Manufacturers
- Over **19,000** distinct devices



Historia

Miguel de Icaza @migueldeicaza.

Creador del proyecto MONO.

Objetivo era deployar apps .NET en ambientes Linux.

Lo compro NOVEL (quedo abandonado ese proyecto).

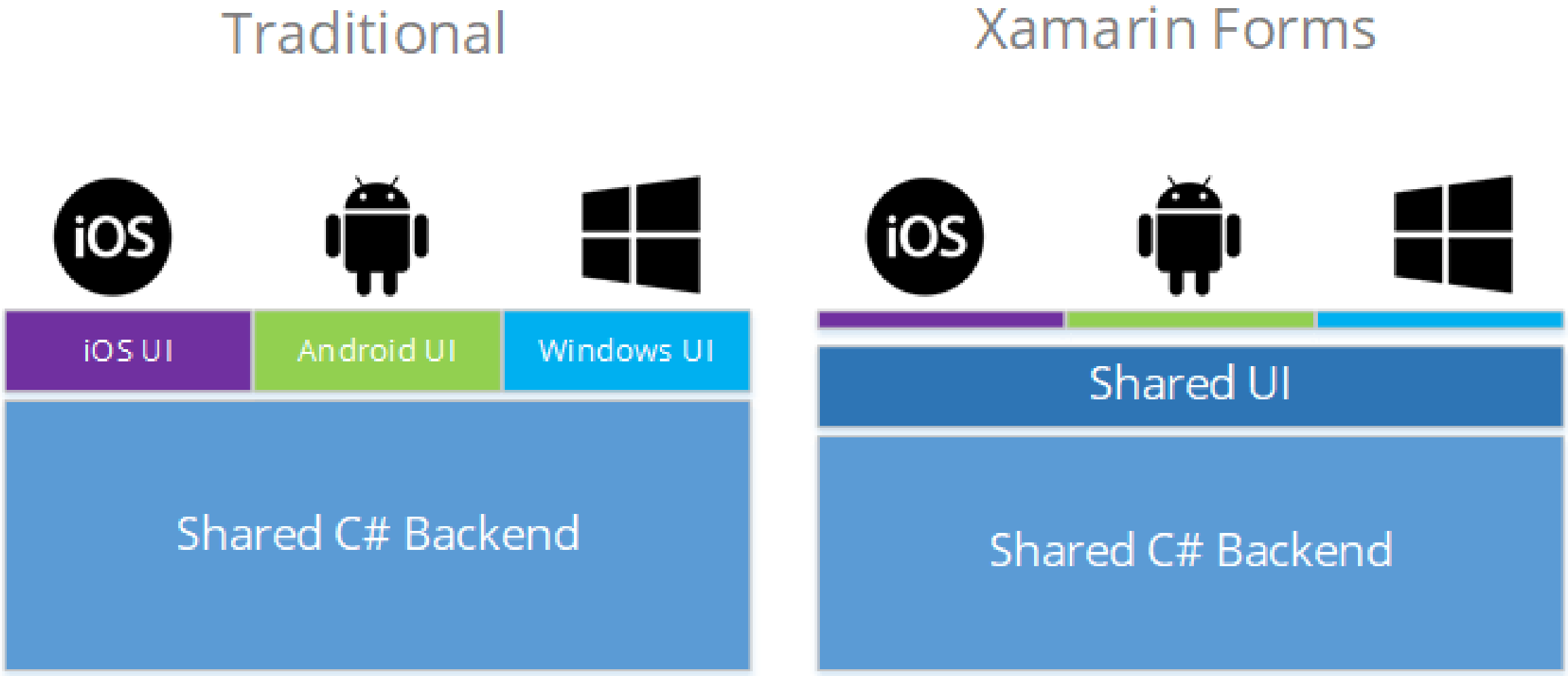
Miguel recuperó la licencia y funda Xamarin (similar idea en móvil).

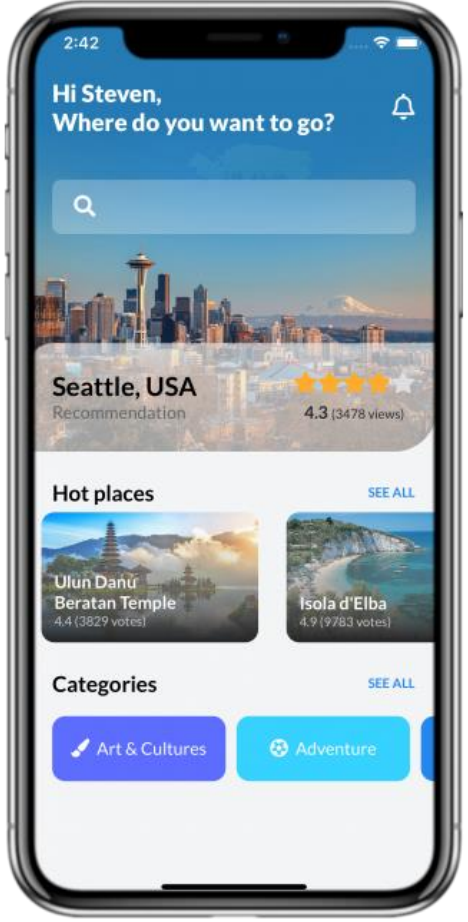
En el 2016 lo compra Microsoft. (sin licencia y proyecto OpenSource)

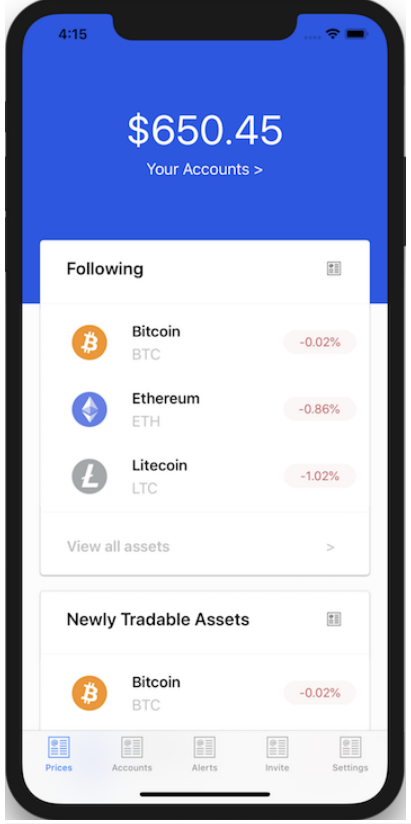
En estos últimos años se generó una gran Comunidad

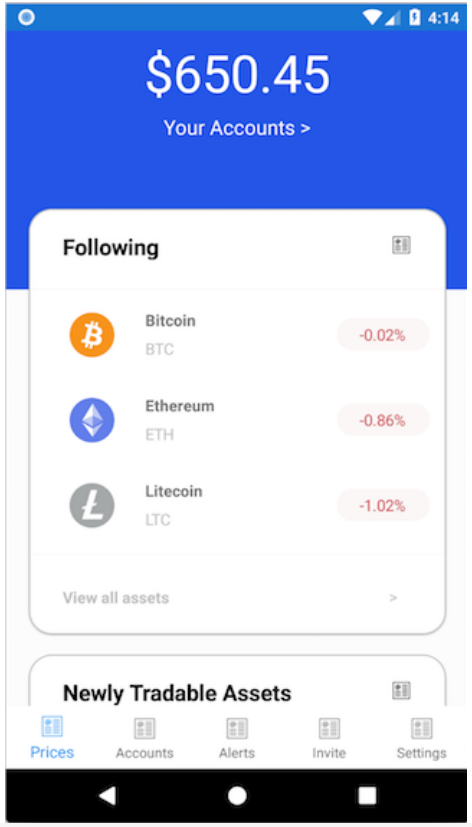
Microsoft dio un gran enfoque a Xamarin Forms!!!

Tipos de Desarrollo en Xamarin



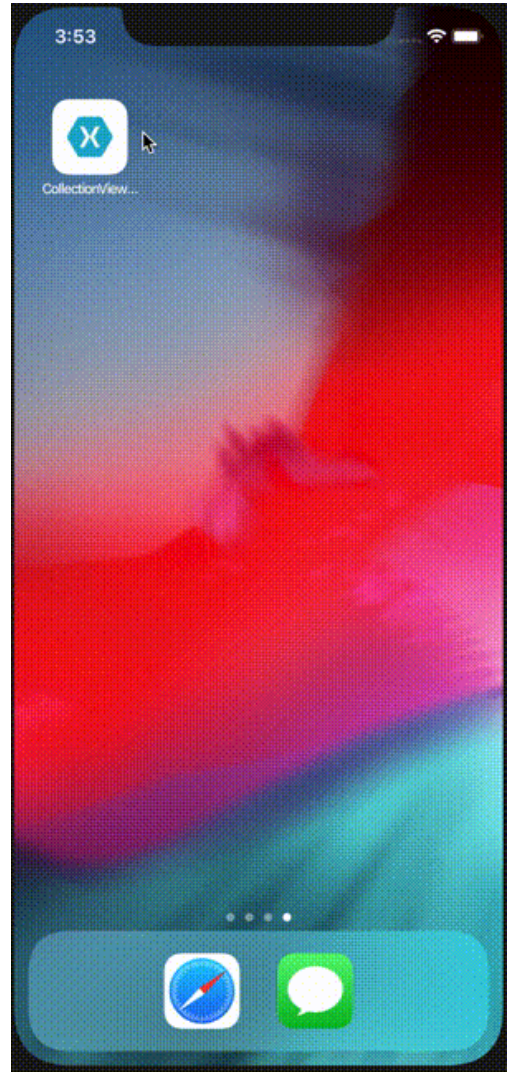






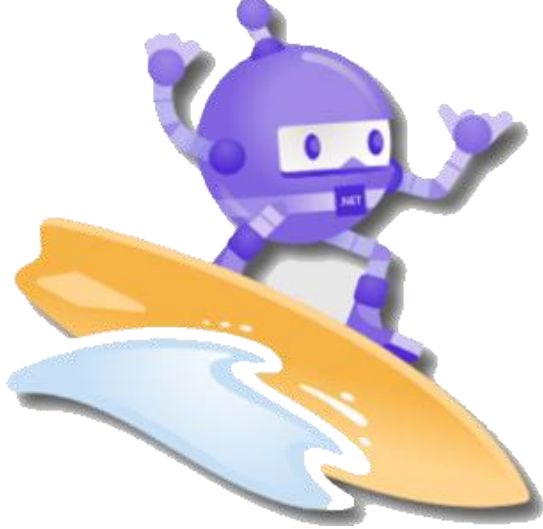
XAML

```
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
             xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
             x:Class="XamlSamples.HelloXamlPage"
             Title="Hello XAML Page">
    <ContentPage.Content>

        <Label Text="Hello, XAML!"
               VerticalOptions="Center"
               HorizontalTextAlignment="Center"
               Rotation="-15"
               IsVisible="true"
               FontSize="Large"
               FontAttributes="Bold"
               TextColor="Blue" />

    </ContentPage.Content>
</ContentPage>
```



Link de Diseños Apps Xamarin Forms

Ventajas



-Necesito 1 solo IDE - Visual Studio

-No hay costo de licencia

-Utiliza C# como lenguaje

-Puedo compartir vistas entre las plataformas

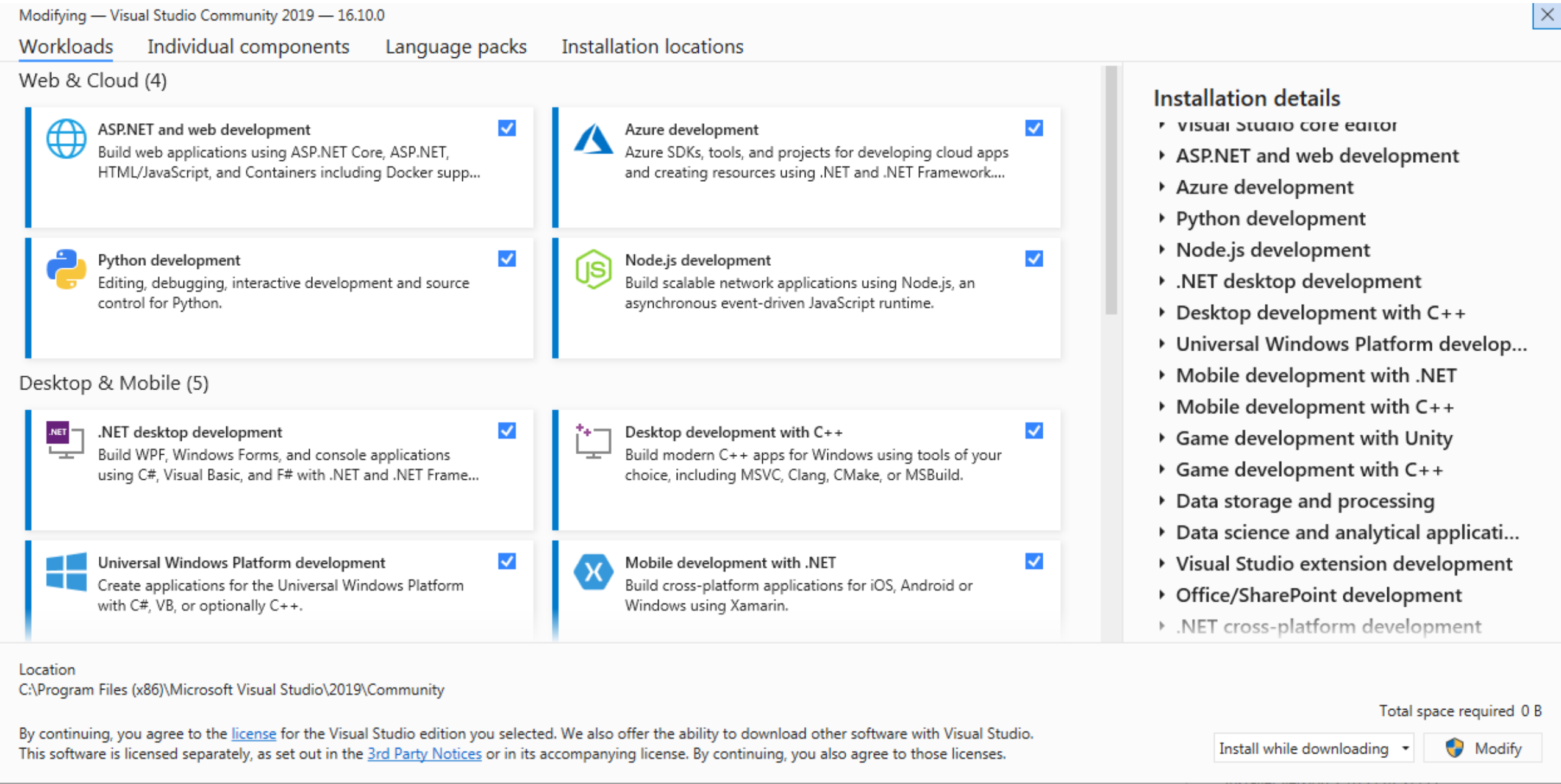
-La Curva de aprendizaje es rápida

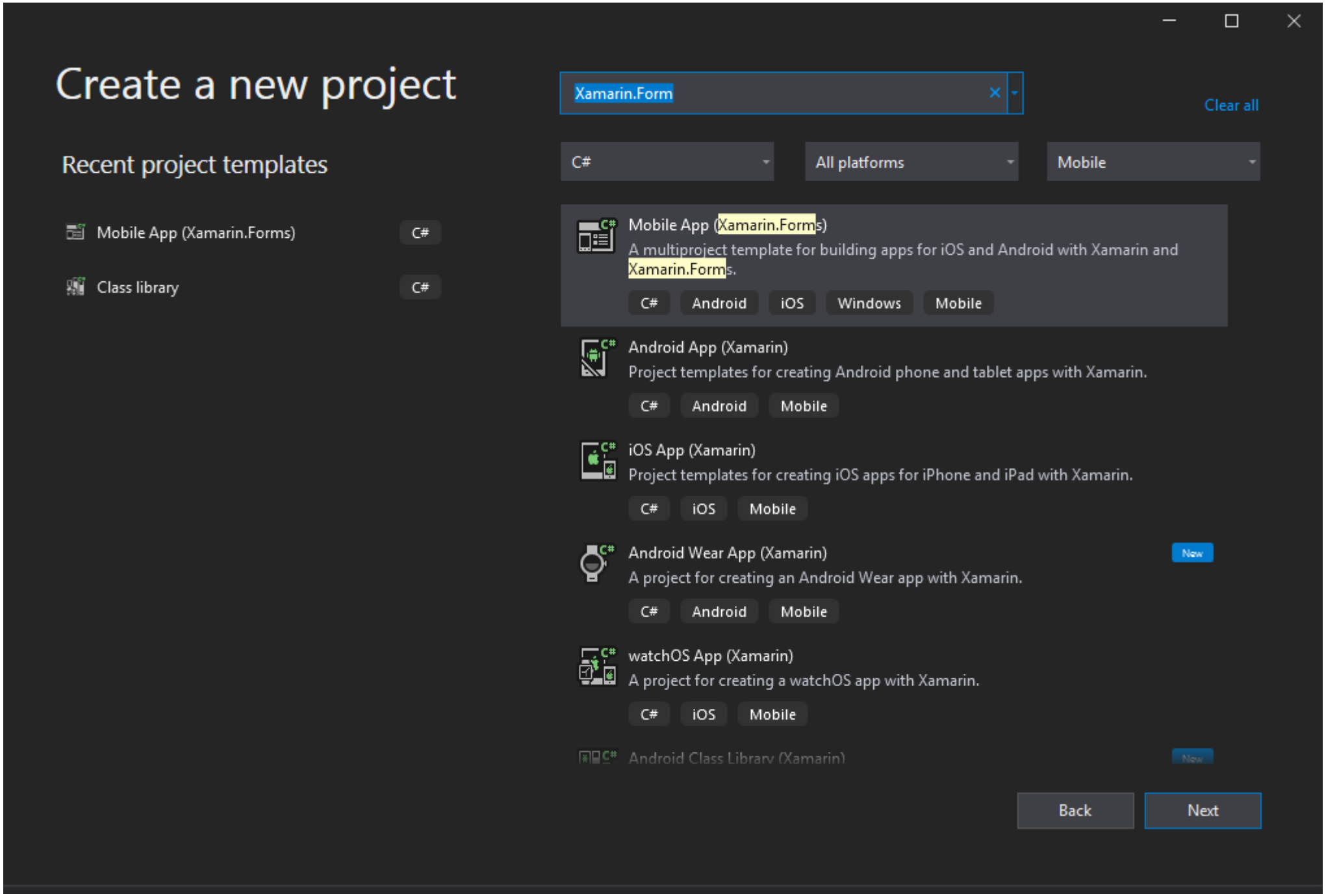
-Puedo crear componentes reutilizables

-Es de código abierto (Repository Git)

-Hay una comunidad muy grande y muy activa, siempre aparecen nuevos controles o features para facilitarnos el desarrollo. Ejemplo Xamarin Control Toolkit

Tener Seleccionado Mobile Development with .NET




Create a new project
Recent project templates
Mobile App (Xamarin.Forms)
C#
Class library
C#
Xamarin.Form
Clear all
C#
All platforms
Mobile
Mobile App (Xamarin.Forms)
A multiproject template for building apps for iOS and Android with Xamarin and Xamarin.Forms.
C#
Android
iOS
Windows
Mobile
Android App (Xamarin)
Project templates for creating Android phone and tablet apps with Xamarin.
C#
Android
Mobile
iOS App (Xamarin)
Project templates for creating iOS apps for iPhone and iPad with Xamarin.
C#
iOS
Mobile
Android Wear App (Xamarin)
New
A project for creating an Android Wear app with Xamarin.
C#
Android
Mobile
watchOS App (Xamarin)
A project for creating a watchOS app with Xamarin.
C#
iOS
Mobile
Android Class Library (Xamarin)
New
Back
Next

Configure your new project

Mobile App (Xamarin.Forms)

C# Android iOS Windows Mobile

Project name

NombreApp

Location

C:\Users\ppiov\source\repos ...

Solution name

NombreApp

Place solution and project in the same directory

Back Create

New Mobile App

Select a template for your app

Flyout
An app with a side menu that can be collapsed on small screens.

Tabbed
An app that uses tabs to navigate between sections.

Blank
An empty app with a single, initial screen.

I plan to develop for:

- [x] Android
- [x] iOS
- [ ] Windows (UWP)

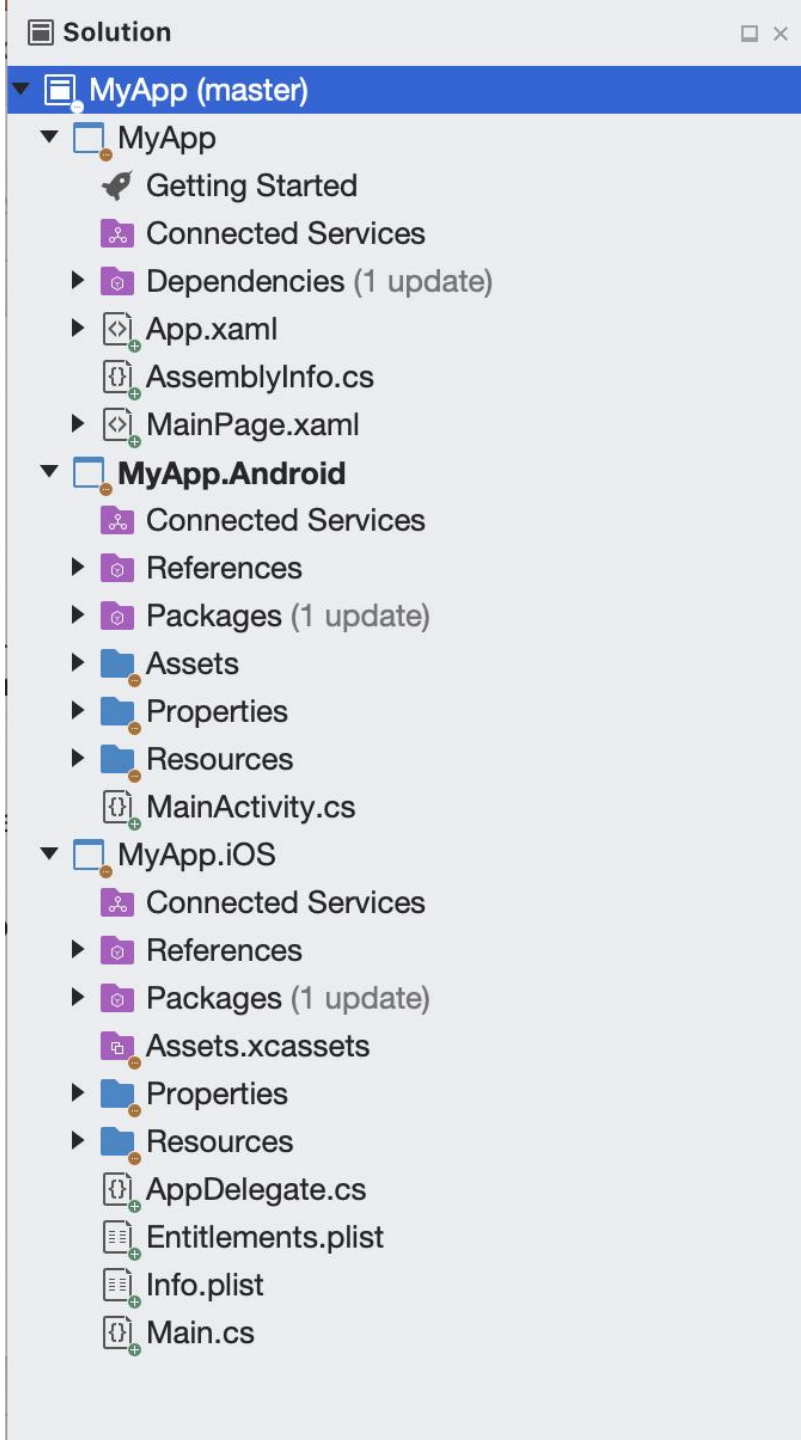
Back Create

Experiencia de Desarrollo

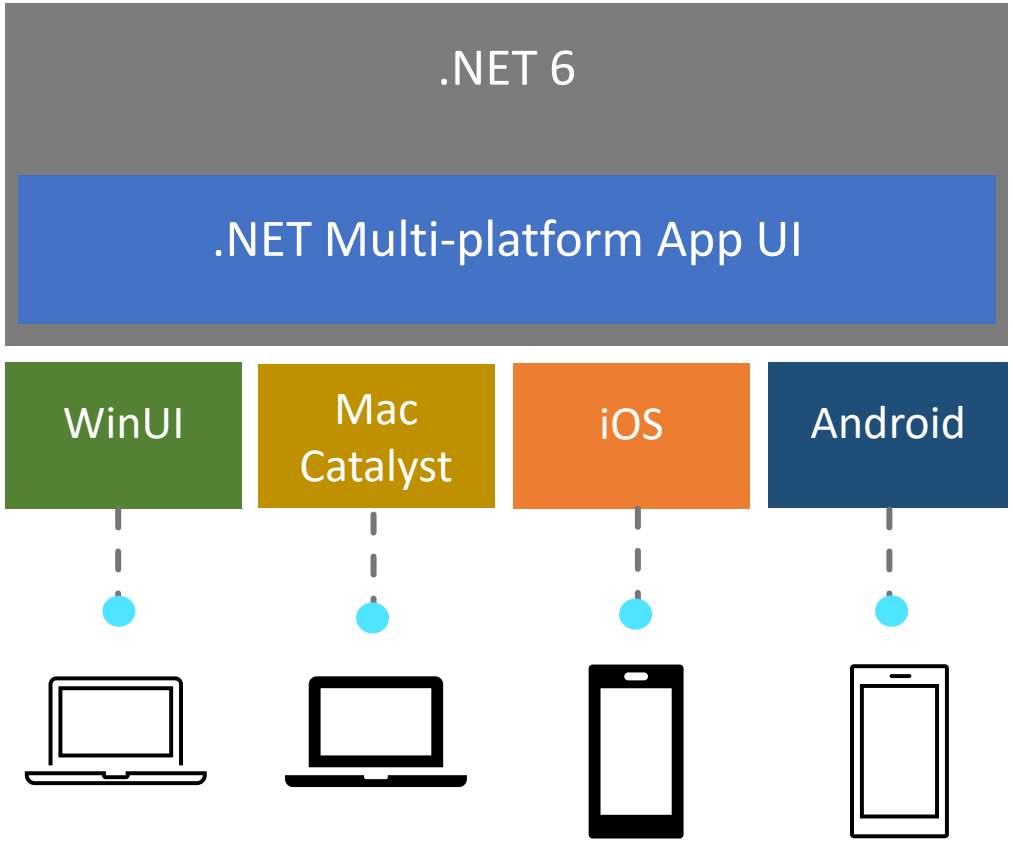
Proyecto único

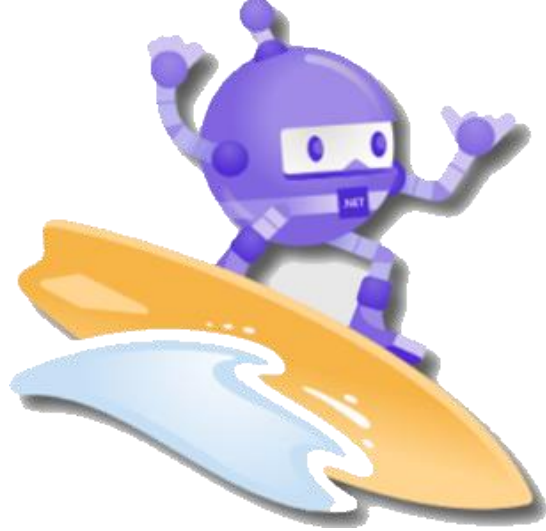
- La idea es mejorar la experiencia reduciendo varios puntos de fricción cuando se desarrolla una App con multiples plataformas.

- Fuentes
- Código de Plataforma



.NET Multi-platform App UI





-UI nativa cross platform

-Proyecto único, Código compartido

-Despliegue a multiples dispositivos, mobile & desktop

- Junio Preview 5
- Julio Preview 6 – Migrar proyectos Xamarin
- Agosto Preview 7
- Septiembre Release Candidate
- Noviembre General Availability Disponible con .NET 6

github.com/dotnet/maui

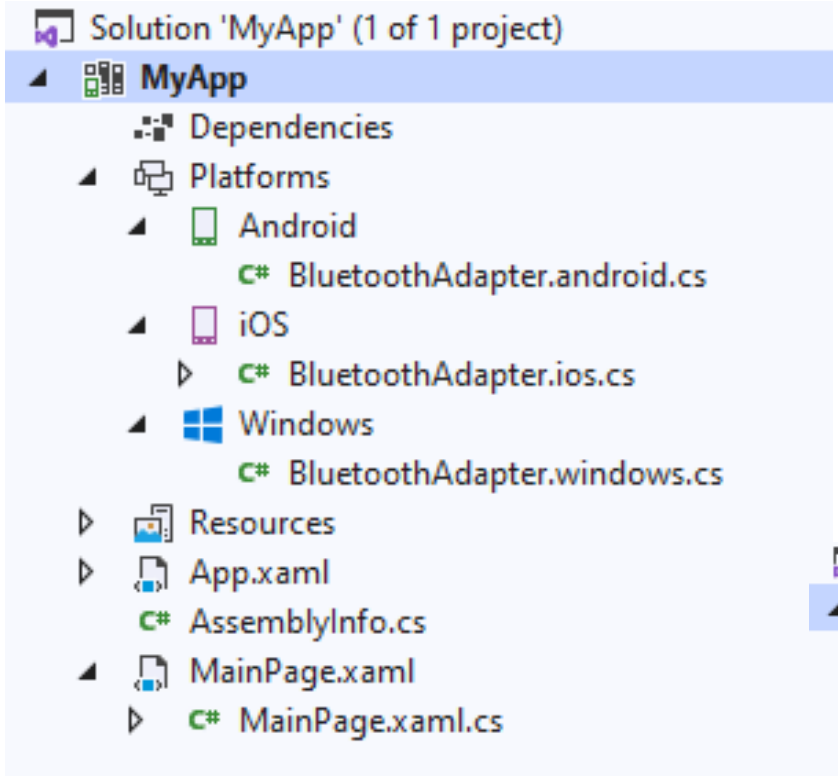
Roadmap · dotnet/maui Wiki (github.com)

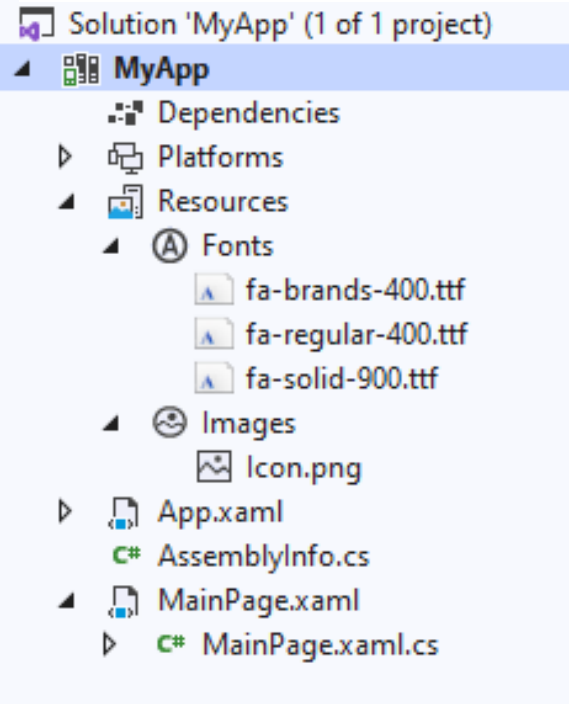
Experiencia de Desarrollo - MAUI

Proyecto único

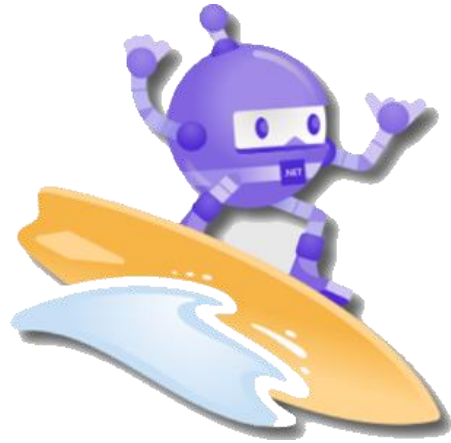
- La idea es mejorar la experiencia reduciendo varios puntos de fricción cuando se desarrolla una App con multiples plataformas.

- Multi-Targeting
- Imágenes
- Fuentes
- Código de Plataforma



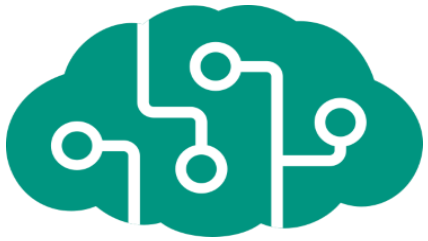


.NET Multi-platform App UI



[Announcing .NET MAUI Preview 4 | .NET Blog (microsoft.com)]

Libraries, Tools & Frameworks y más!!!



Cognitive Services

App Center

Azure Devops

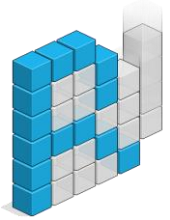
Reactive Extensions

Jenkins

MVVMCross

Uno Platform

Zeplin



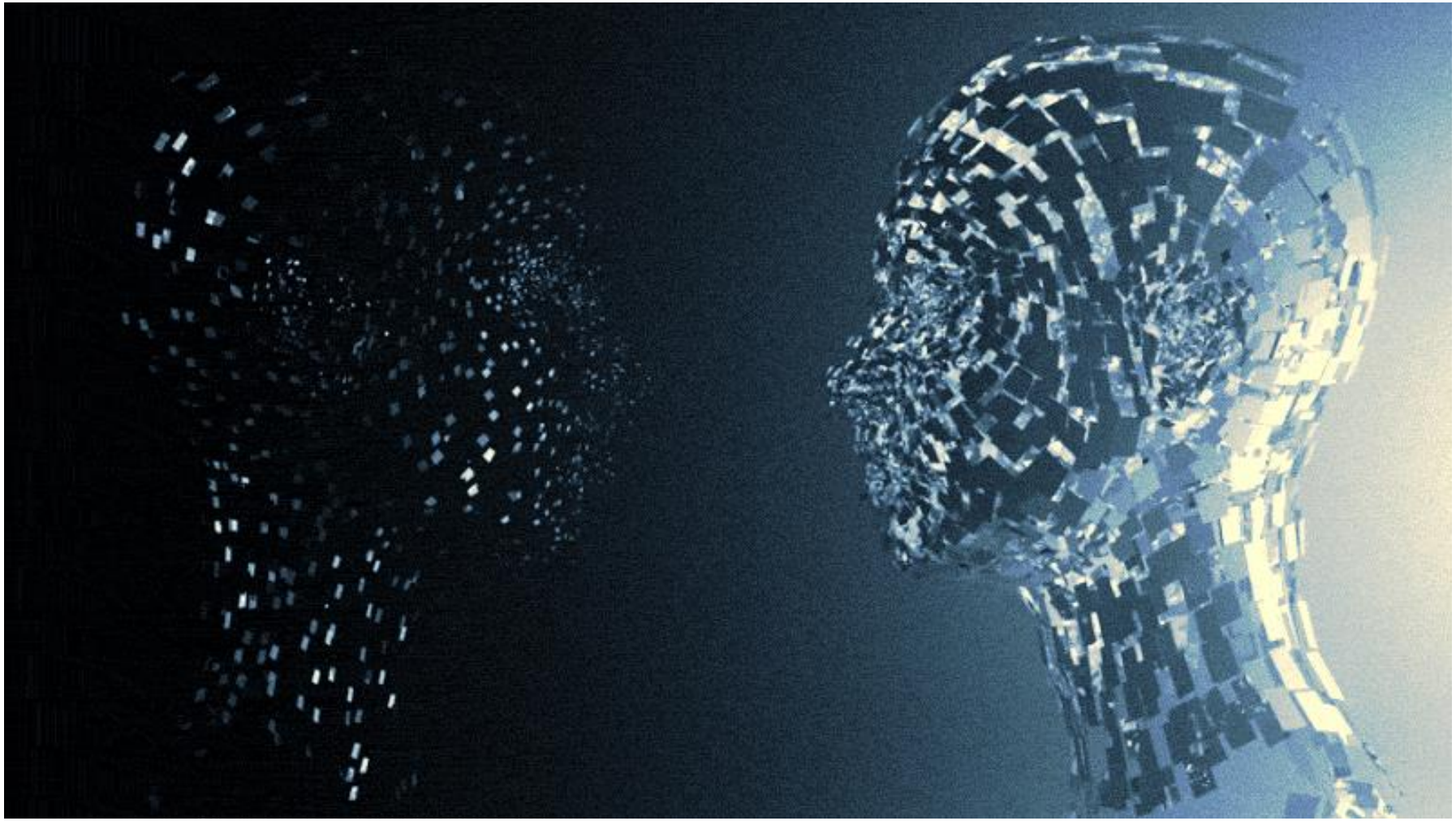
ReactiveUI

Zxing Barcode Scanning

Akavache

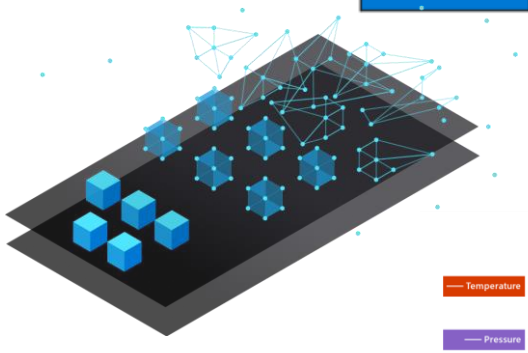
¿Qué es la Inteligencia Artificial?

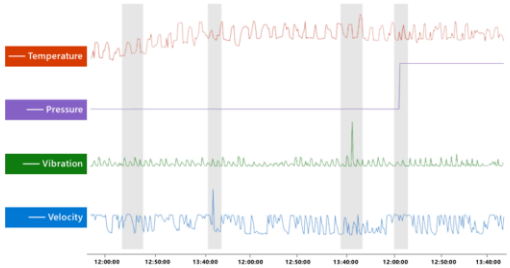
Es la creación de software que imita comportamientos y capacidades humanas.

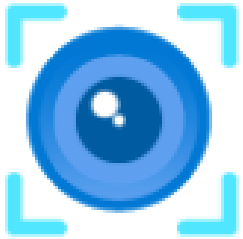


Cargar de trabajo comunes en IA

Aprendizaje automático	Modelos predictivos basados en datos y estadísticas: la base de la IA
Detección de anomalías	Sistemas que detectan patrones o eventos inusuales, lo que permite una acción preventiva
Computer Vision	Aplicaciones que interpretan la entrada visual de cámaras, imágenes o vídeos.
Procesamiento del lenguaje natural	Aplicaciones que pueden interpretar el lenguaje escrito o hablado
IA conversacional	Agentes de IA (o *bots*) que pueden entablar diálogos con usuarios humanos



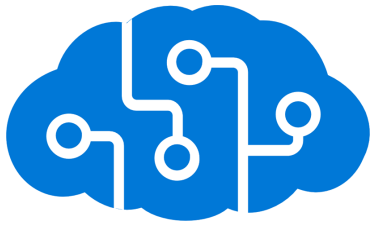
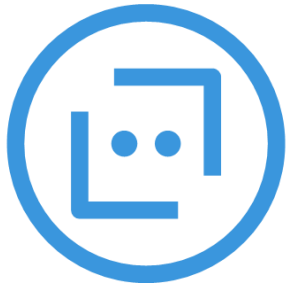




Inteligencia Artificial de Azure

Fácil de usar — **Dificultad Media** — **Dificultad Alta**

- Cognitive Services.
  - Bot Service.
  - QnA Maker.
  - LUIS.
- Azure ML Studio Visual Experience.
- Azure ML Studio Code Experience.

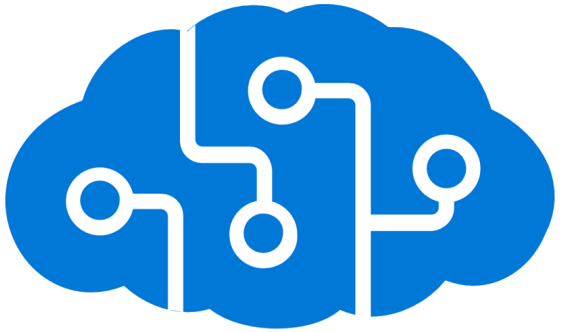



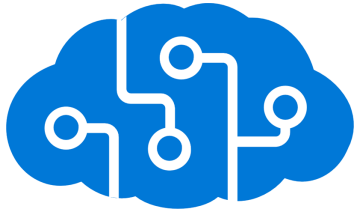

¿Qué son los Servicios Cognitivos?

- Son servicios que brindan inteligencia a una aplicación informática.

- Integran poderosos algoritmos y técnicas de Inteligencia Artificial, por ejemplo:

    - Reconocimiento facial.
    - Reconocimiento de voz.
    - Reconocimiento de texto en una imagen.
    - Conversión de texto a voz y viceversa.
    - Traducción en tiempo real.
    - Y muchos más!!!.





¿Qué es Azure Cognitive Services?

- Es una colección de APIs inteligentes basadas en la nube que hacen posible que las aplicaciones vean, escuchen, hablen, entiendan e incluso tomen decisiones interpretando las necesidades de los seres humanos, utilizando métodos naturales de comunicación.

- Anunciado oficialmente en el evento //Build 2016.

- Previamente conocido como Proyecto Oxford.

¿Por qué Microsoft Azure Cognitive Services?

Fácil

REST APIs

Simple de añadir: solo unas cuantas líneas de código

Flexible

Se integra en el lenguaje y la plataforma de su elección.

La amplitud de ofertas le ayuda a encontrar la API correcta para su aplicación

Traiga sus propios datos para su experiencia personalizada

node

python

Probado

Construido por expertos en su campo de Microsoft Research, Bing y Azure Machine Learning

Documentación de calidad, código de muestra y soporte comunitario

GitHub

stackoverflow

msdn

uservoice

Servicios Cognitivos de Azure

Visión

- Video Indexer
- **Computer Vision**
- **Face**
- **Custom Vision**
- Form Recognizer

Voz

- Speaker Recognition
- Speech Services

Idioma

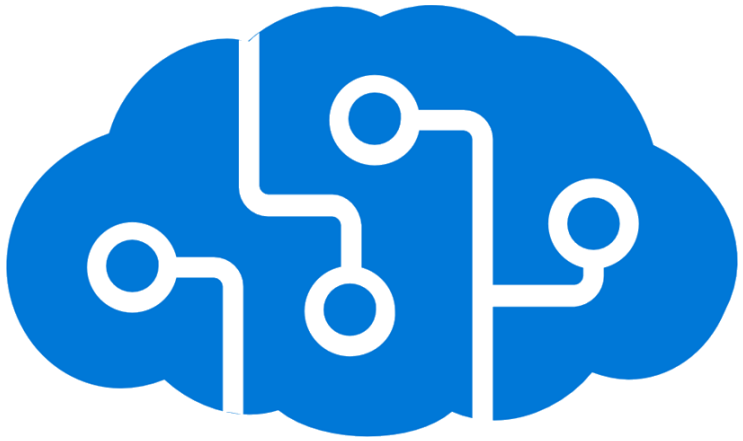
- LUIS
- QnA Maker
- Text Analytics
- **Traductor**

Decisión

- Anomaly Detector
- Content Moderator
- Personalizer

Búsqueda

- Bing Web Search
- Bing Custom Search
- Bing Image Search
- Bing Entity Search
- Bing News Search
- Bing Video Search
- Bing Autosuggest
- Bing Spell Check
- Bing Local Business Search

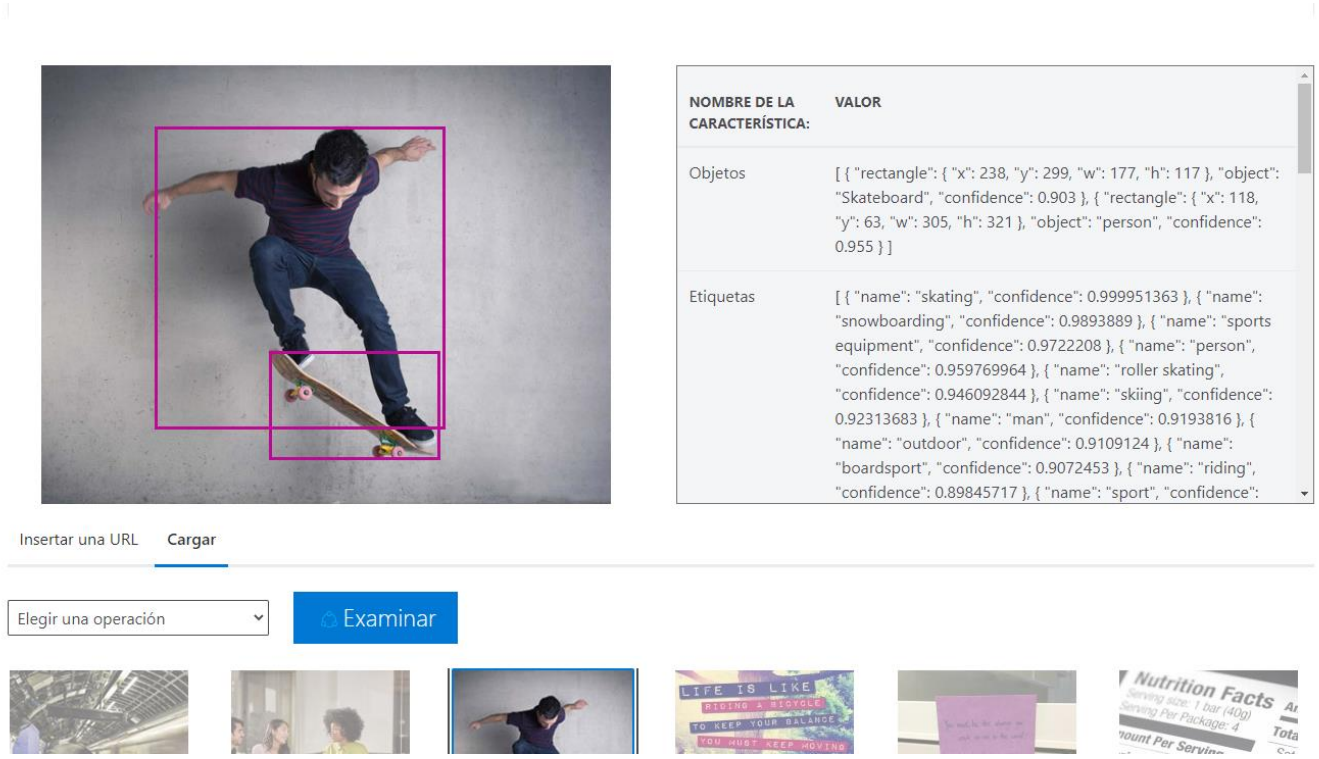


Link a Documentación Oficial

Azure Cognitive Services – Computer Vision

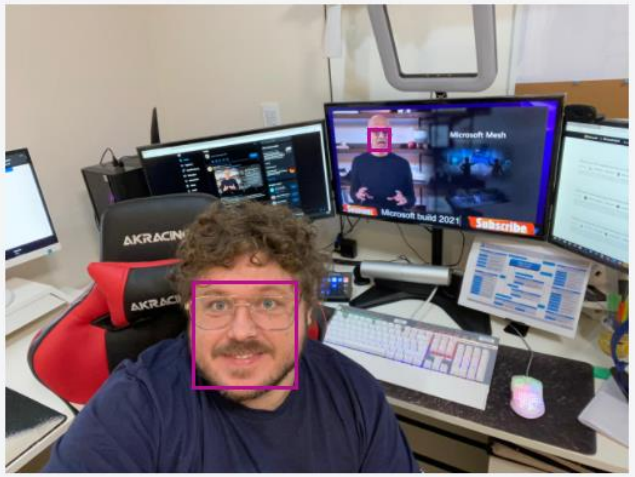
- Es el servicio de Inteligencia artificial que analiza el contenido de imágenes y vídeos.

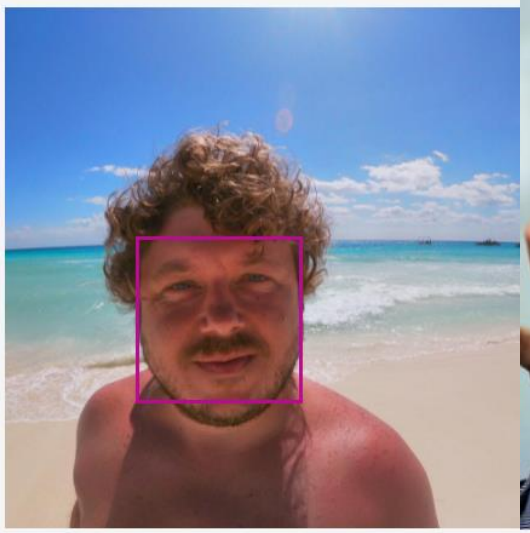
- Que se puede hacer:
  - Descripción de una imagen
  - Etiquetado de características visuales
  - Detección de objetos
  - Detección de caras
  - Reconociminto de OCR en imágenes
  - Generar vistas en miniatura
  - Moderar contenido

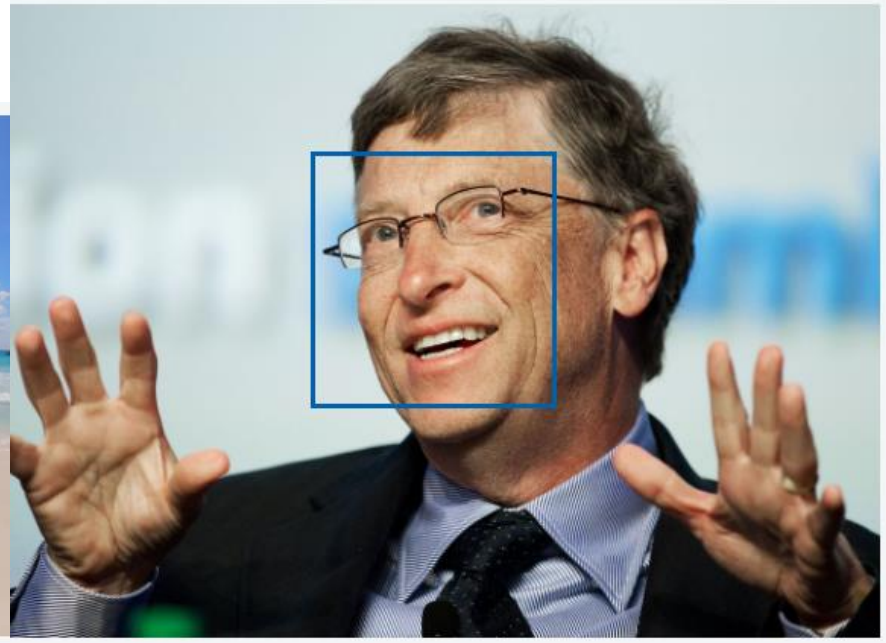


Azure Cognitive Services – FACE

- Detección de caras
- Comprobación facial
- Reconocimiento de emociones percibidas







URL de la imagen | Enviar | Examinar

URL de la imagen | Enviar | Examinar

Resultado de la comprobación: las dos caras pertenecen a la misma persona. **La confianza es 0.91385.**


```
Resultado de la detección:
1 caras detectadas

JSON:
[
  {
    "faceRectangle": {
      "top": 187,
      "left": 482,
      "width": 316,
      "height": 316
    },
    "faceAttributes": {
      "emotion": {
        "anger": 0.0,
        "contempt": 0.0,
        "disgust": 0.0,
        "fear": 0.0,
        "happiness": 1.0,
        "neutral": 0.0,
        "sadness": 0.0,
        "surprise": 0.0
      }
    }
  }
]
```

Microsoft Azure

Home > Resource groups > DemoAI > Create a resource >

Custom Vision

Microsoft

Custom Vision

Add to Favorites

Microsoft

★★★★☆ 4.3 (44 ratings)

Create

Prediction Resource

Select pricing and location for Prediction Resource

Prediction location * (US) East US

Prediction pricing tier (Learn More) * ⓘ

Free F0 (2 Transactions per second, 10K Transactions per month)

Standard S0 (10 Transactions per second)

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Resource groups > DemoAI > Create a resource > Custom Vision >

Create

Custom Vision All In One

optimize manufacturing processes, accelerate digital marketing campaigns -- and more. No machine learning expertise is required. Learn more

Create options: Both | Training | Prediction

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ: Pay-As-You-Go

Resource group * ⓘ: DemoAI

Create new

Name * ⓘ: XamDemo ✓

Training Resource

Select pricing and location for Training Resource

Training location * (US) East US

Training pricing tier (Learn More) * ⓘ

Free F0 (2 Transactions per second, 2 Projects)

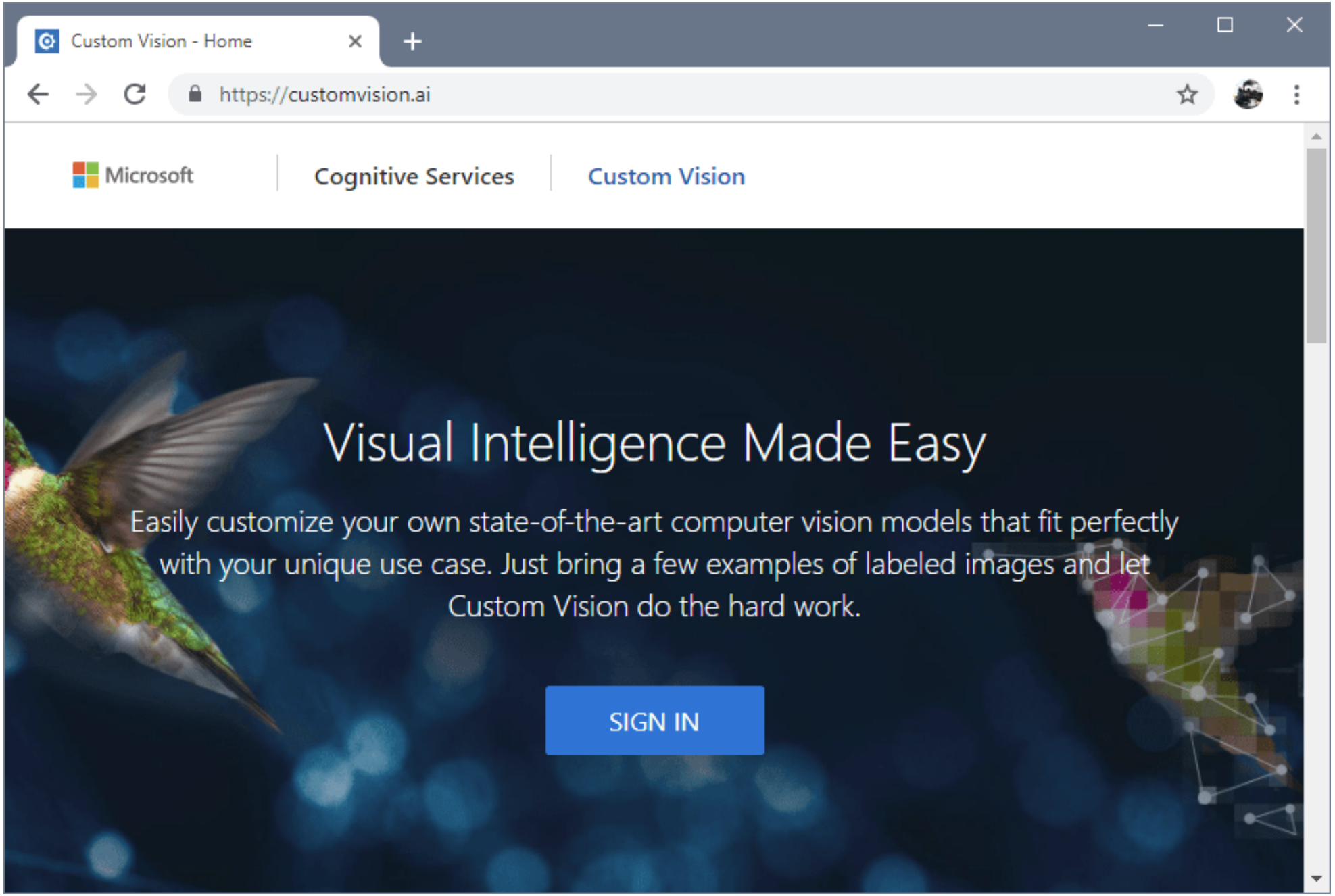
Standard S0 (10 Transactions per second)

Prediction Resource

Select pricing and location for Prediction Resource

Prediction location * (US) East US

Prediction pricing tier (Learn More) * ⓘ


Custom Vision - Home
https://customvision.ai
Microsoft
Cognitive Services
Custom Vision
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

Create new project

Name*

Enter project name

Description

Enter project description

Resource create new

Manage Resource Permissions

Project Types

- (•) Classification
- ( ) Object Detection

Classification Types

- ( ) Multilabel (Multiple tags per image)
- (•) Multiclass (Single tag per image)

Domains:

- (•) General [A2]
- ( ) General [A1]
- ( ) General
- ( ) Food
- ( ) Landmarks
- ( ) Retail
- ( ) General (compact) [S1]
- ( ) General (compact)
- ( ) Food (compact)
- ( ) Landmarks (compact)
- ( ) Retail (compact)

Pick the domain closest to your scenario. Compact domains are lightweight models that can be exported to iOS/Android and other platforms. Learn More

Fruit

Training Images | Performance | Predictions | Train | Quick Test

Filter

Add images | Delete | Tag images | Select all

Iteration

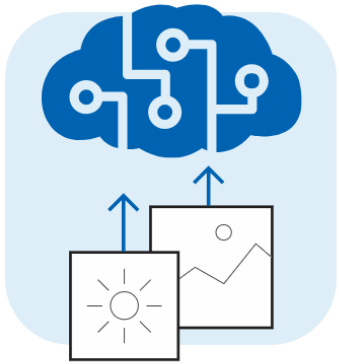
Workspace

Tags

Tagged | Untagged

Showing: all tagged images

Search for



Looks like you don't have any images here!

Go ahead and browse for images to upload to your project, tag them, and they will be ready to be trained.

Add images

.JPG, .PNG, .BMP format, up to 6 MB per image

XamDragonBall

Training Images | Performance | Predictions | Train | Quick Test

Filter

Iteration

Workspace

Tags

Tagged | Untagged

Showing: all tagged images

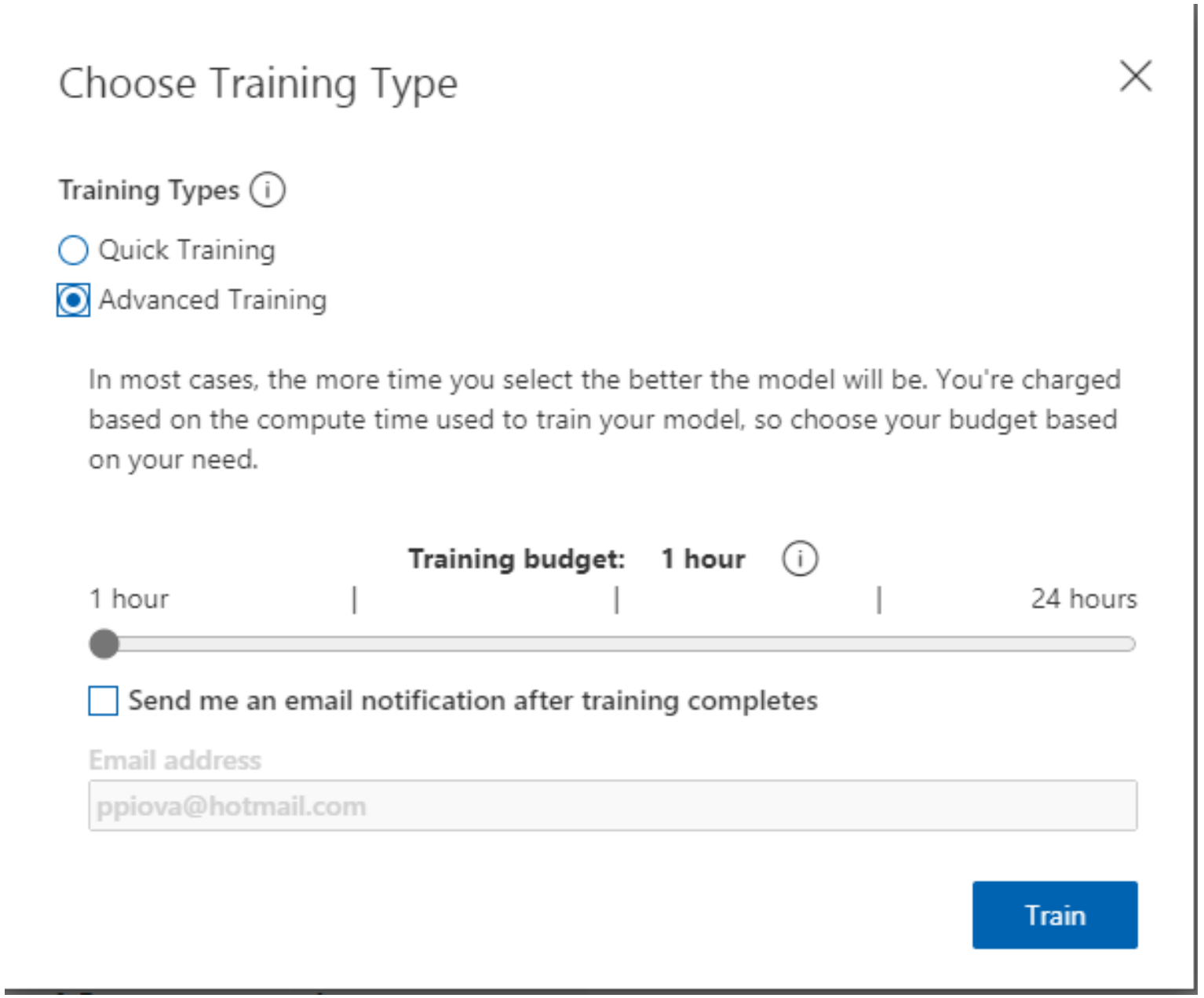
Search For Tags:

- Cell 30
- Goku 32
- Goku Super Saiyan 28
- Krilin 32
- Piccolo 28
- Super Buu 28
- Vegeta 31

Add images | Delete | Tag images | Select all

< 1 2 3 4 >

Get started


Choose Training Type
Training Types
Quick Training
Advanced Training
In most cases, the more time you select the better the model will be. You're charged based on the compute time used to train your model, so choose your budget based on your need.
Training budget: 1 hour
1 hour
24 hours
Send me an email notification after training completes
Email address
ppiova@hotmail.com
Train

Iterations

Probability Threshold: 50%

Iteration 4 PUBLISHED
Advanced Trained : 21 hours ago with General (compact) domain, Training Budget: 2 hours

Iteration 3
Trained : 23 hours ago with General (compact) domain

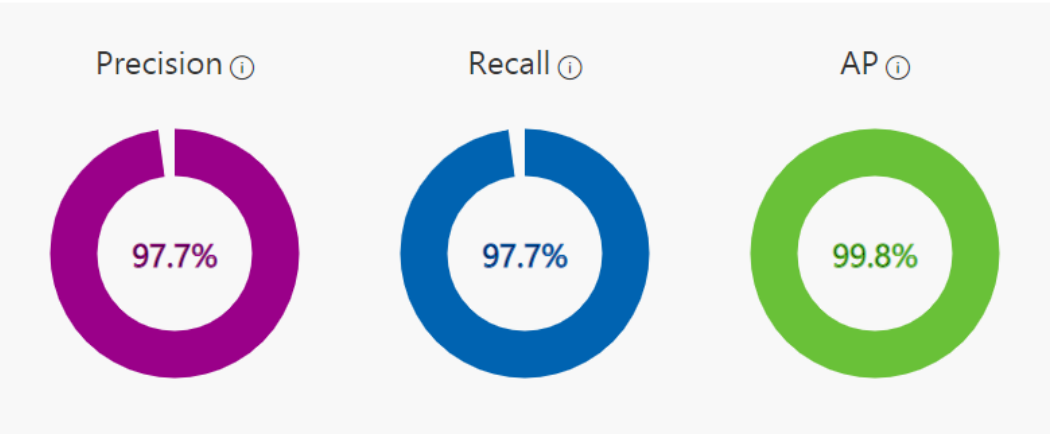
Iteration 2
Trained : 23 hours ago with General (compact) domain

Iteration 1
Trained : 1 days ago with General (compact) domain

Unpublish | Prediction URL | Delete | Export

Iteration 4

Finished training on **6/1/2021, 8:57:42 PM** using **General (compact)** domain
Iteration id: **29086a4a-2a31-45c2-a097-bcf1bc9cd9a3**
Classification type: **Multiclass (Single tag per image)**
Published as: **Iteration4**



Performance Per Tag

Tag	Precision	Recall	A.P.	Image count
Vegeta	100.0%	100.0%	100.0%	31
Super Buu	100.0%	100.0%	100.0%	28
Piccolo	100.0%	100.0%	100.0%	28
Goku Super Saiyan	100.0%	83.3%	100.0%	28

Get started

Iterations

Probability Threshold: 50%

Iteration 4 PUBLISHED

Advanced Trained : 21 hours ago with General (compact) domain, Training Budget: 2 hours

Iteration 3

Trained : 23 hours ago with General (compact) domain

Iteration 2

Trained : 23 hours ago with General (compact) domain

Iteration 1

Trained : 1 days ago with General (compact) domain

Training Images | Performance | Predictions | Train | Quick Test

Performance Per Tag

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Super Buu	100.0%	100.0%	100.0%	28
Piccolo	100.0%	100.0%	100.0%	28
Goku Super Saiyan	100.0%	83.3%	100.0%	28
Goku	100.0%	100.0%	100.0%	32
Cell	100.0%	100.0%	100.0%	30
Krilin	87.5%	100.0%	98.2%	32

Quick Test

Image URL

Enter Image URL

or

Browse local files

File formats accepted: jpg, png, bmp
File size should not exceed: 4mb

Using model trained in

Iteration

Iteration 4

Predictions

Tag	Probability
Piccolo	100%
Cell	0%
Goku Super Saiyan	0%
Super Buu	0%
Goku	0%

XamDragonBall

Training Images | Performance | Predictions | Train | Quick Test

Filter

Delete | Tag images

Iteration

Iteration 4

Tags

Showing: all predicted images

Search For Tags:

- [ ] Cell
- [ ] Goku
- [ ] Goku Super Saiyan
- [ ] Krilin
- [ ] Piccolo
- [ ] Super Buu
- [ ] Vegeta

Sort

- (•) Suggested
- ( ) Newest
- ( ) Oldest


Viene la Demo
Xamarin
Y tu lo sabes!!!

MUCHAS GRACIAS!!!