TECH CONFERENCE
DotNet 2020

#DotNet2020

ML.NET: how to use .NET to implement machine learning!

What is Machine Learning?

"The goal of machine learning is

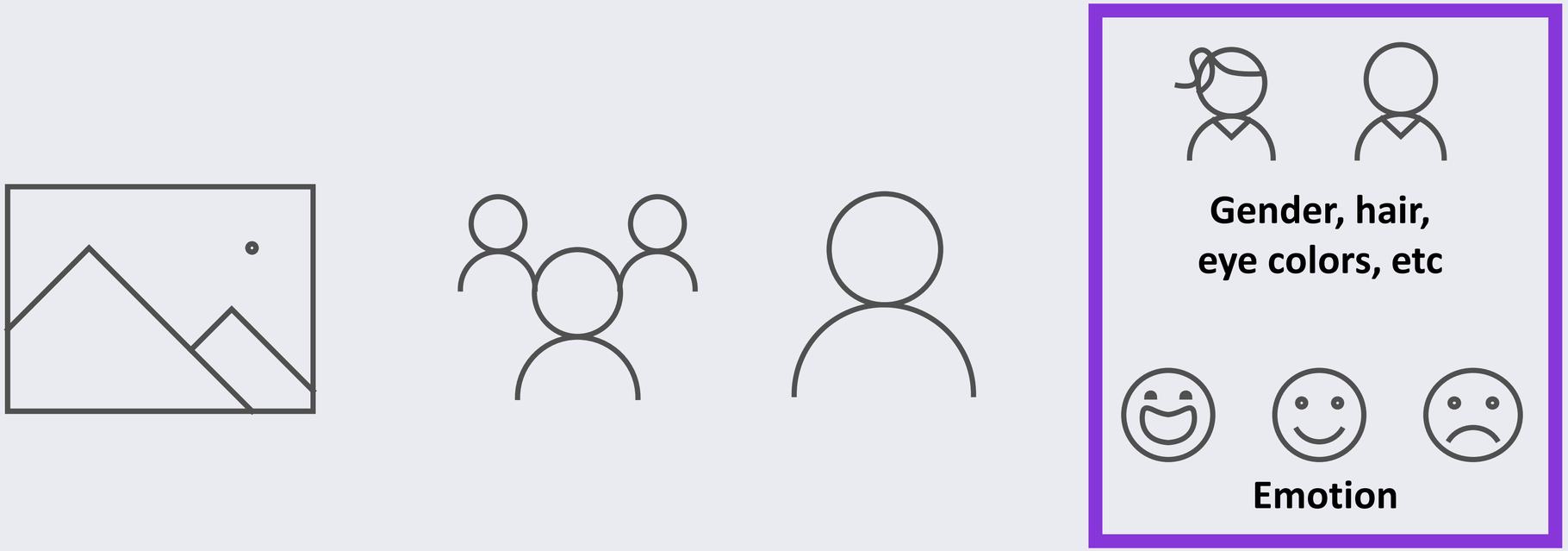
to program computers

to use **example data** or **past experience**

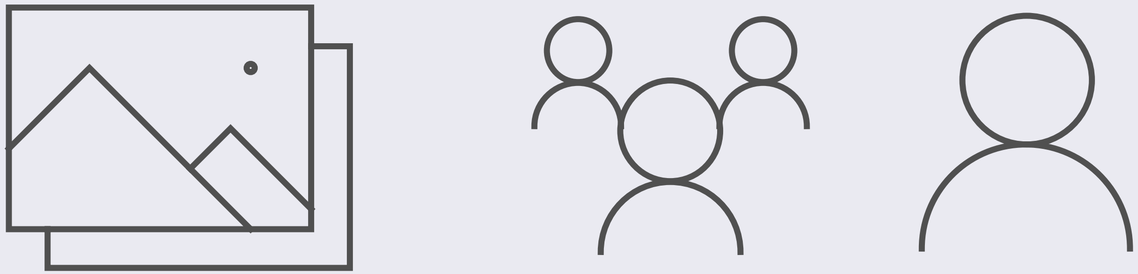
to solve a given problem."

Introduction to Machine Learning, 2nd Edition, MIT Press

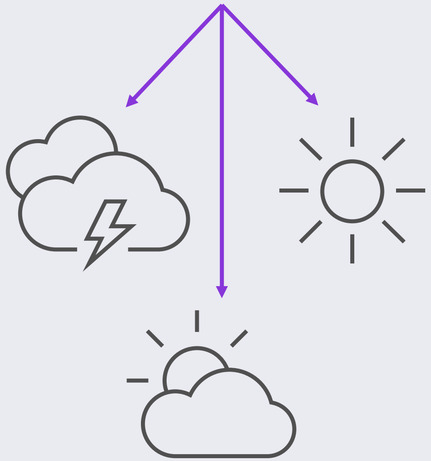
How does it work?



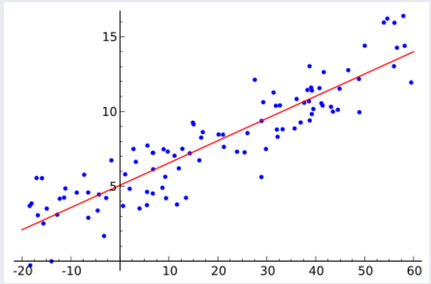
How does it work?



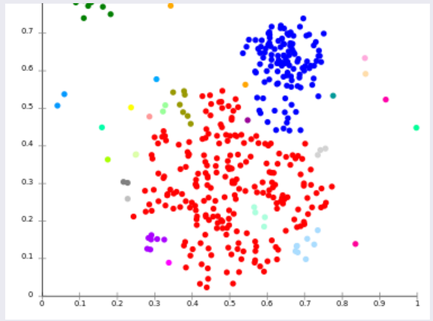
Different ML scenarios



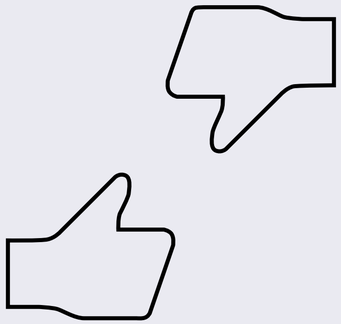
Classification



Regression

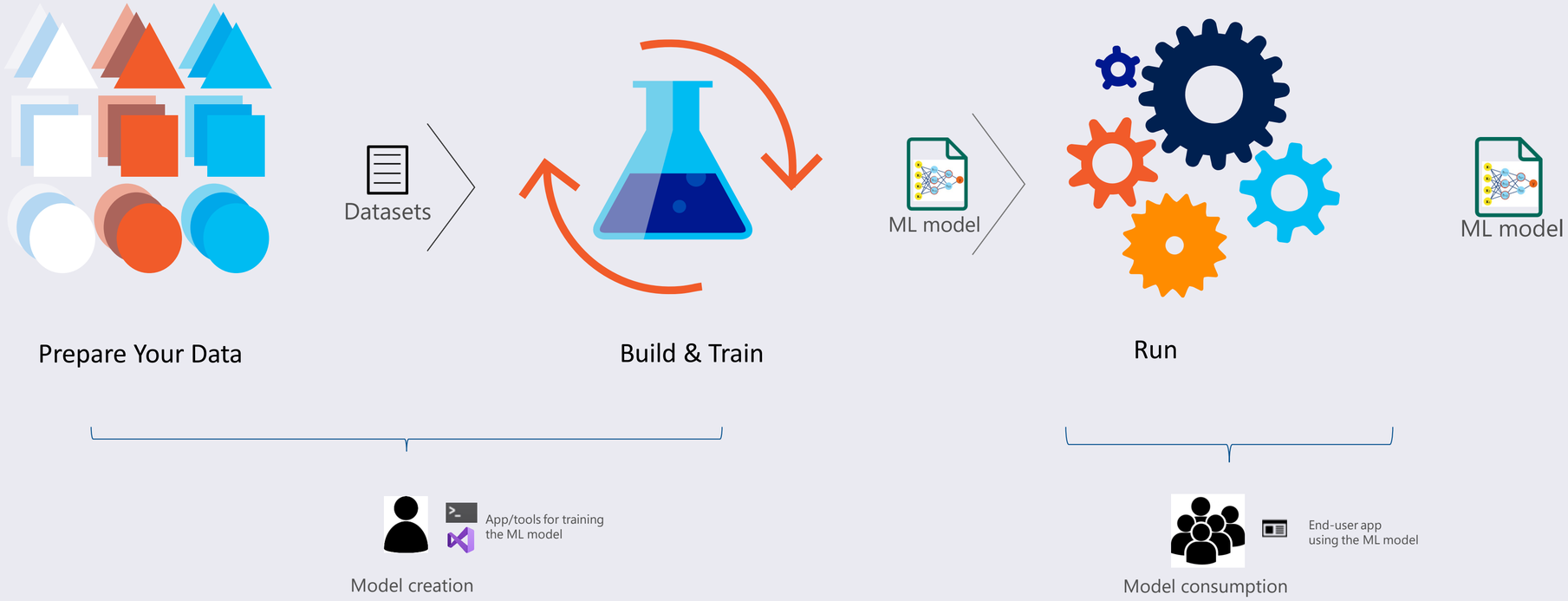


Clustering



Recommendation

Machine Learning workflow



So does machine learning require skills?

Languages

Frameworks

ML.NET

What it is?

An open source and cross-platform machine learning framework

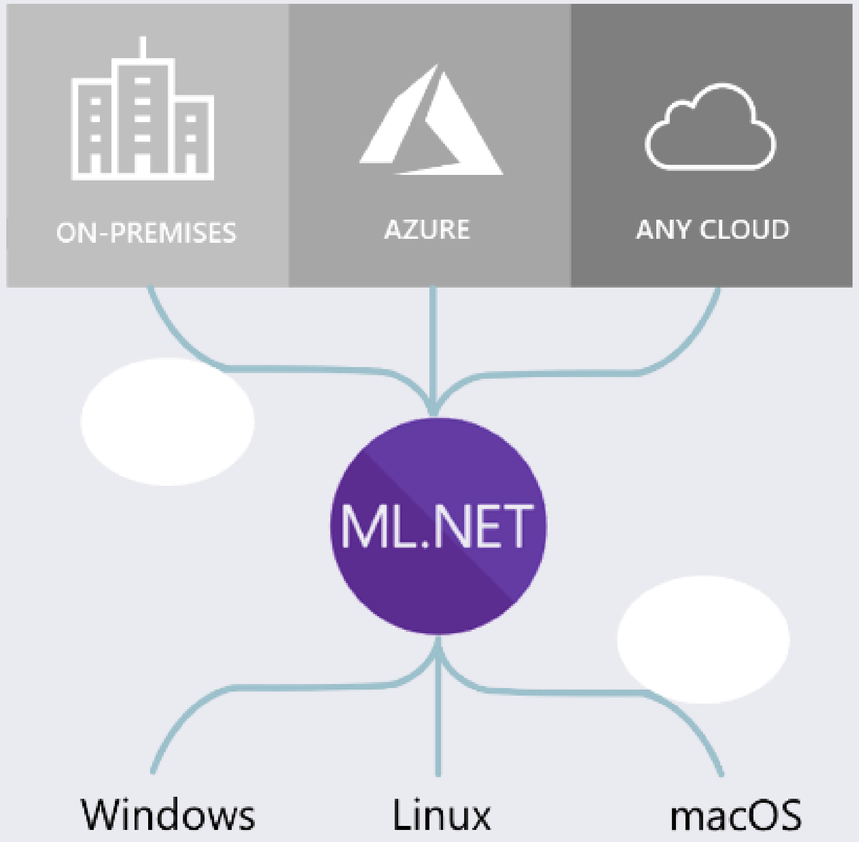
Built for .NET developers

Custom ML made easy with tools

Extended with TensorFlow & more

Trusted & proven at scale

ML.NET runs anywhere



ML for all .NET developers!

Tools and features to help devs to easily build, train and deploy high-quality custom ML models!

Sentiment analysis

Analyze the sentiment of customer reviews using a binary classification algorithm.

Sentiment analysis sample >

Product recommendation

Recommend products based on purchase history using a matrix factorization algorithm.

Product recommendation sample >

Price prediction

Predict taxi fares based on distance traveled etc. using a regression algorithm.

Price prediction sample >

Customer segmentation

Identify groups of customers with similar profiles using a clustering algorithm.

Customer segmentation sample >

GitHub labeler

Suggest the GitHub label for new issues using a multi-class classification algorithm.

GitHub labeler sample >

Fraud detection

Detect fraudulent credit card transactions using a binary classification algorithm.

Fraud detection sample >

Spam detection

Flag text messages as spam using a binary classification algorithm.

Spam detection sample >

Image classification

Classify images (e.g. broccoli vs pizza) using a TensorFlow deep learning algorithm.

Image classification sample >

Sales forecasting

Forecast future sales for products using a regression algorithm.

Sales forecasting sample >

You can find more ML.NET samples on GitHub, or take a look at the ML.NET tutorials.

Three ways to use ML.NET

ML.NET
API
(Code)

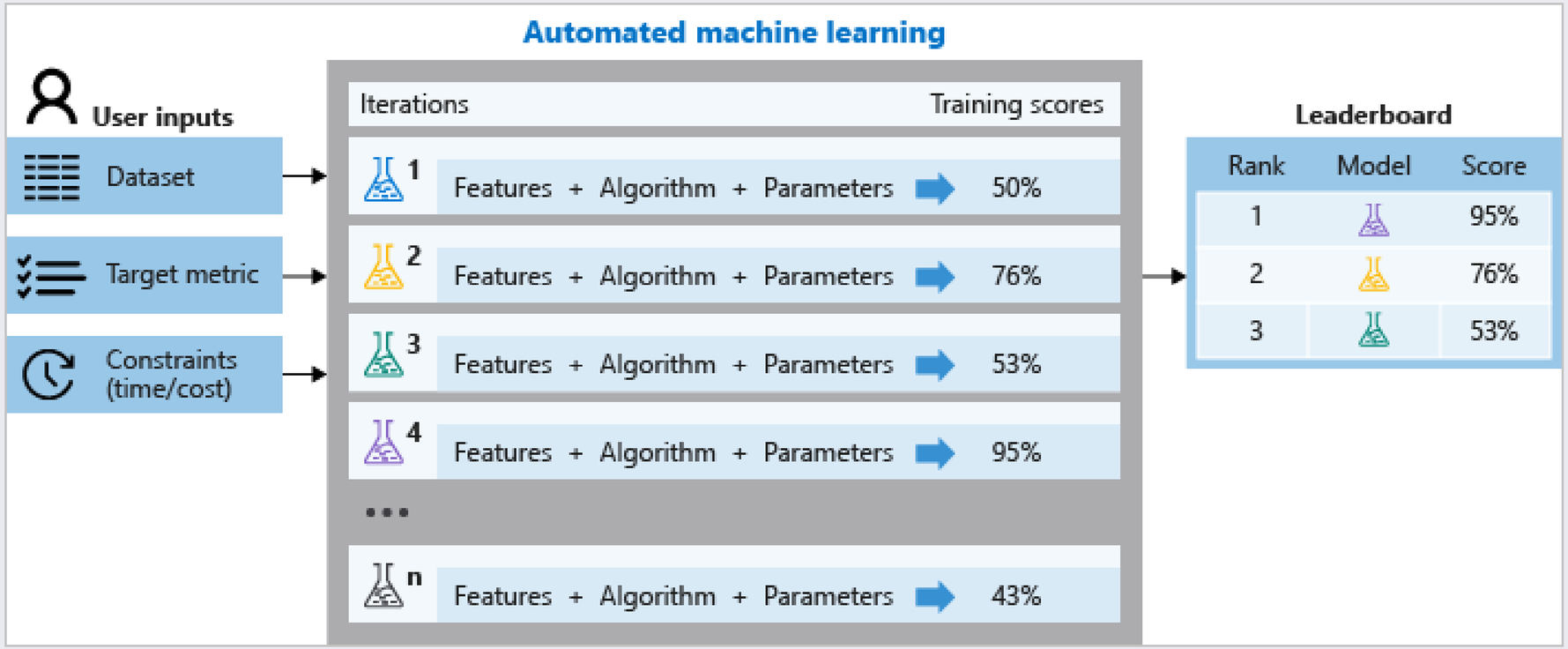
ML.NET
Model Builder
(Visual Studio UI)

ML.NET
CLI
(Command-Line Interface)

Model Builder

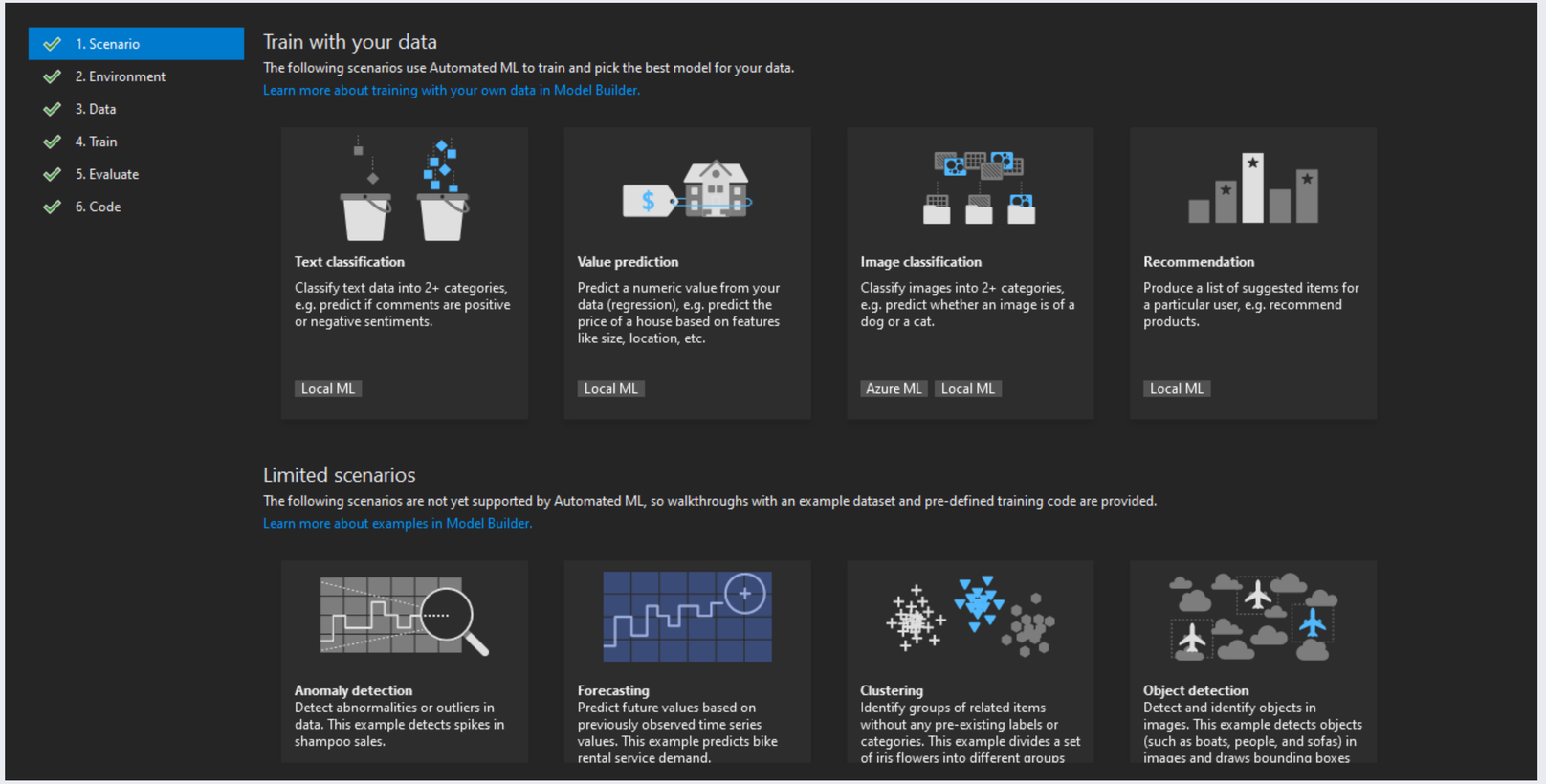
AutoML

Automates the process of building best performing models

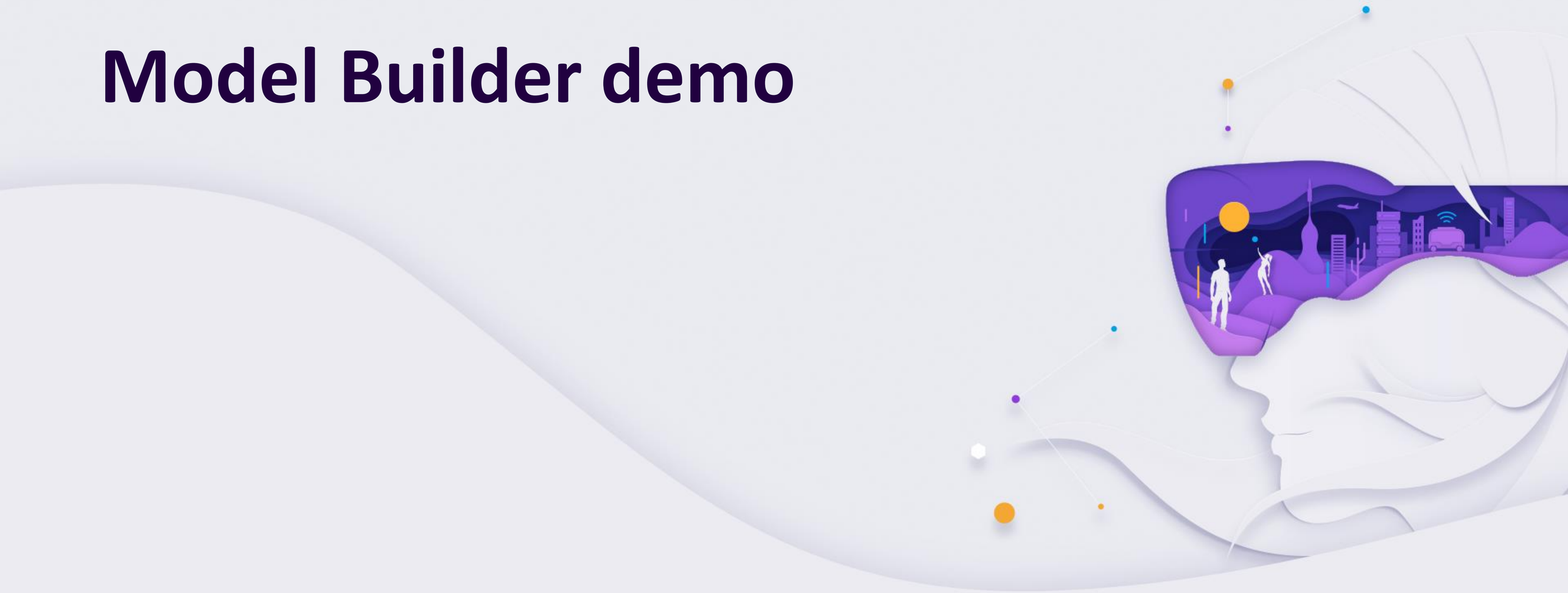


Model Builder

UI in Visual Studio that uses AutoML



Model Builder demo



ML.NET CLI

ML.NET CLI

```
λ  mlnet classification --dataset "wiki-train-data.tsv" --label-col 0 --has-header true --train-time 10
Start Training
|     Trainer                              MicroAccuracy  MacroAccuracy  Duration #Iteration                |
|1    AveragedPerceptronOva                       0.7434         0.7062       7.8          1                |

================================================Experiment Results=================================================
-------------------------------------------------------------------------------------------------------------------
|                                                    Summary                                                      |
-------------------------------------------------------------------------------------------------------------------
|ML Task: multiclass-classification
|Dataset: C:\Users\guscianc\source\repos\DotNetConfDemo\CliDemo\wiki-train-data.tsv
|Label : Sentiment
|Total experiment time : 7.8075637 Secs
|Total number of models explored: 1
-------------------------------------------------------------------------------------------------------------------

|                                               Top 1 models explored                                             |
-------------------------------------------------------------------------------------------------------------------
|     Trainer                              MicroAccuracy  MacroAccuracy  Duration #Iteration                |
|1    AveragedPerceptronOva                       0.7434         0.7062       7.8          1                |
-------------------------------------------------------------------------------------------------------------------

Code Generated
Generated C# code for model consumption:
Check out log file for more information:
Exiting ...
C:\Users\guscianc\source\repos\DotNetConfDemo\CliDemo
```

ML CLI demo

@guenda_s

www.linkedin.com/in/guenda-sciancalepore

Guenda Sciancalepore

Cloud Solution Architect – Data & AI

I work for Microsoft since four years, currently as a Cloud Solution Architect focused on AI & ML helping partners developing innovative solutions and products.

I’m based in Italy, in the beautiful Milan.

Thanks and …
See you soon!

Thanks also to the sponsors.
Without whom this would not have been posible.

plain concepts

Microsoft

axazure

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Far far away, behind the word mountains.

Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a large language ocean.

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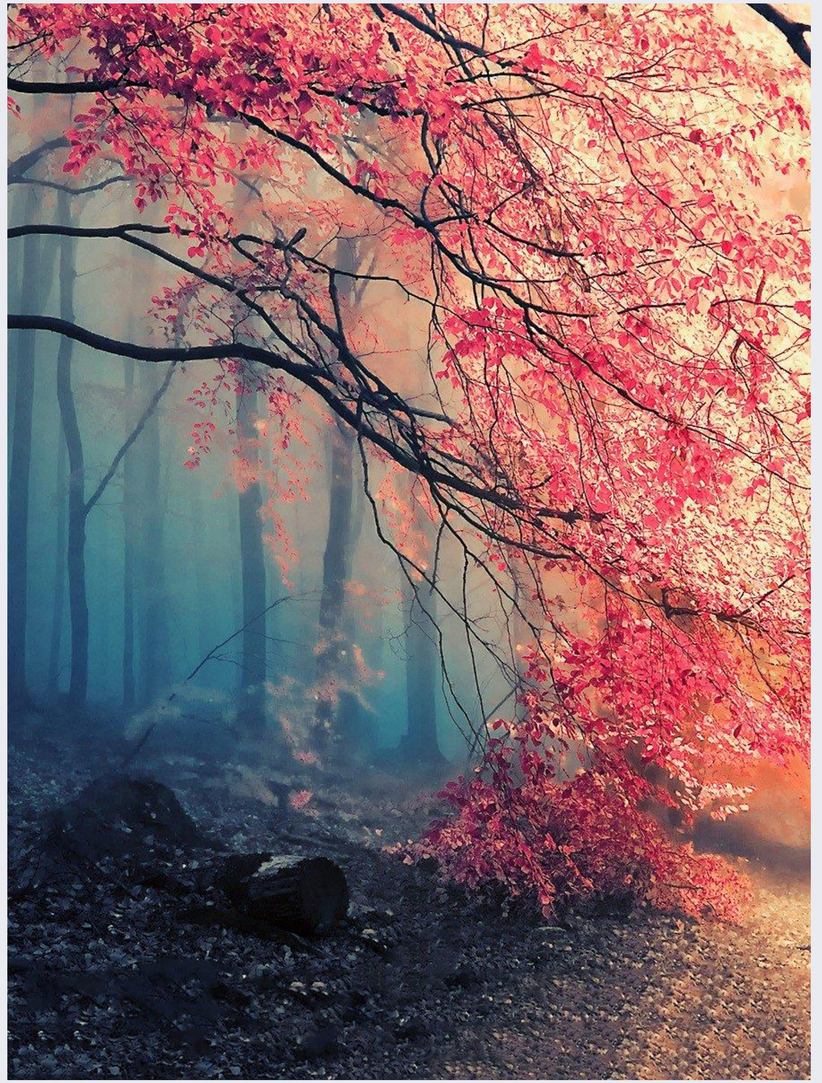

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Vokalia and Consonantia.

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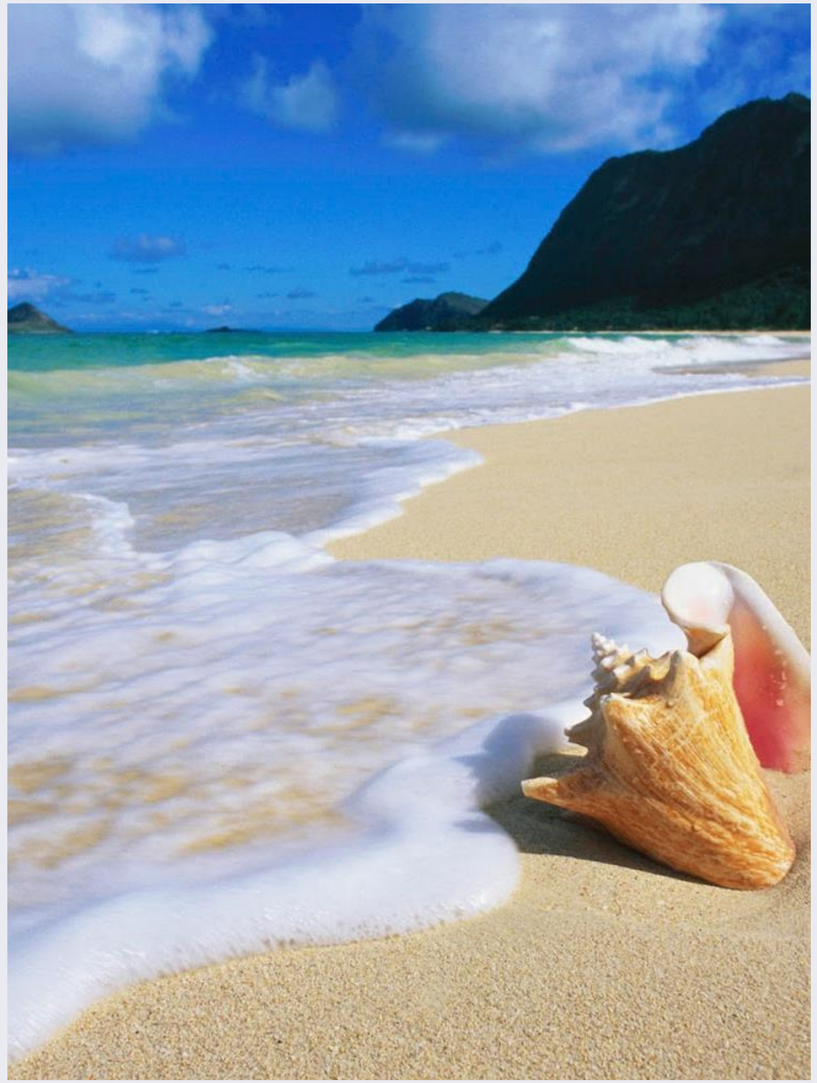


```
/*
 * C# Program to Perform Unboxing Operation
 */
using System;
class sample
{
   int data;
   void insert(object x)
   {
      data = (int)x * 5;
   }
   object delete()
   {
      data=0;
      return (object)data;
   }
   public static void Main()
   {
      sample s = new sample();
      s.insert(10);
      Console.WriteLine("Data : {0}", s.data);
      Console.WriteLine("Data : {0}", s.delete());
      Console.ReadLine();
   }
}
```

Questions & Answers

Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts. Separated they live in Bookmarksgrove right at the coast of the Semantics, a larg language ocean.

Marco Minnemann

Github Issue Classifier

The goal

dotnet / corefx

Watch 1,567 | Star 13,864 | Fork 3,983

Code | Issues 2,209 | Pull requests 58 | Projects 0 | Wiki | Insights

IsolatedStorage fails on Mac if ~/.local/share directory does not exist #29354

New issue

Open **jasongin** opened this issue 5 days ago · 13 comments

jasongin commented 5 days ago

Repro steps:

1. Start with a clean Mac OS machine, or at least a clean user account on Mac that does not have any `~/.local/share` directory created yet.
2. From a .NET Core app, call `IsolatedStorageFile.GetUserStoreForAssembly()`

Result

Assignees

maryamariyan

Labels

area-System.IO

bug

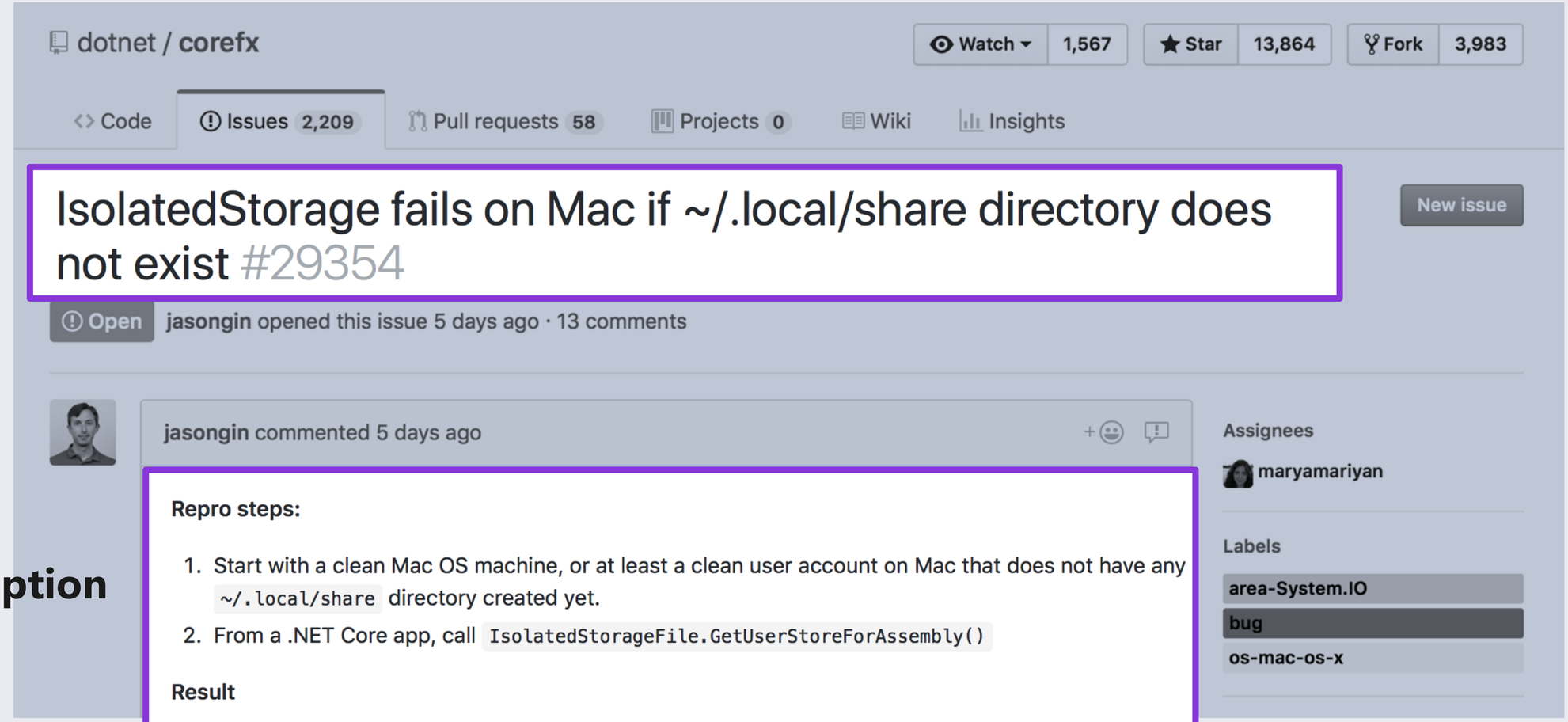
os-mac-os-x

GitHub Issue Classifier

Features

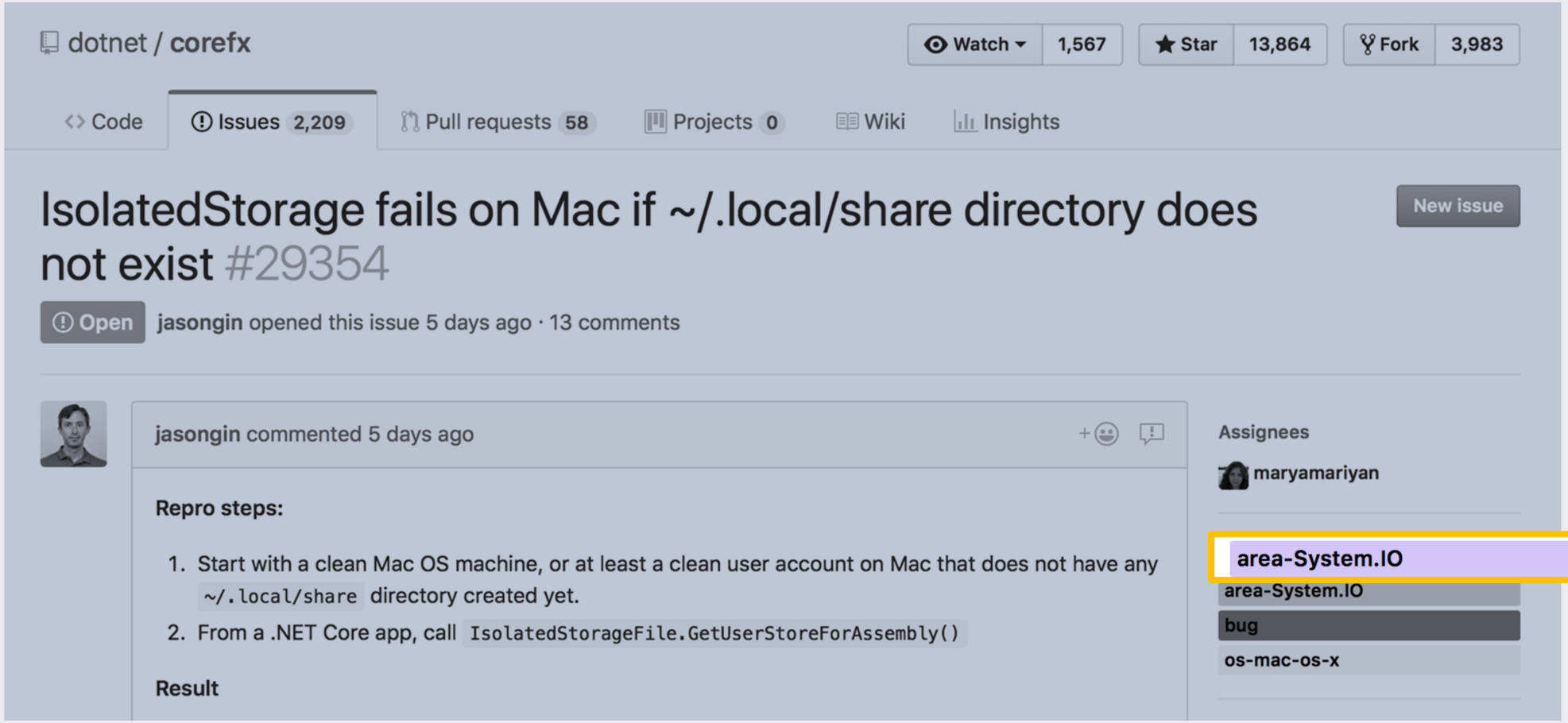
Title

Description



GitHub Issue Classifier

Labels



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