

# Spam AutoML

# What's in this session?

1. Install ML.NET Model Builder
2. Create new .NET CORE console project and add Machine Learning job
3. Pick a Scenario / Price Prediction
4. Set Data File
5. Set train time
6. Understand Train result
7. Understand evaluation result
8. Generate Code
9. Examine Code

# Install ML.NET Model Builder

<https://marketplace.visualstudio.com/items?itemName=MLNET.07>



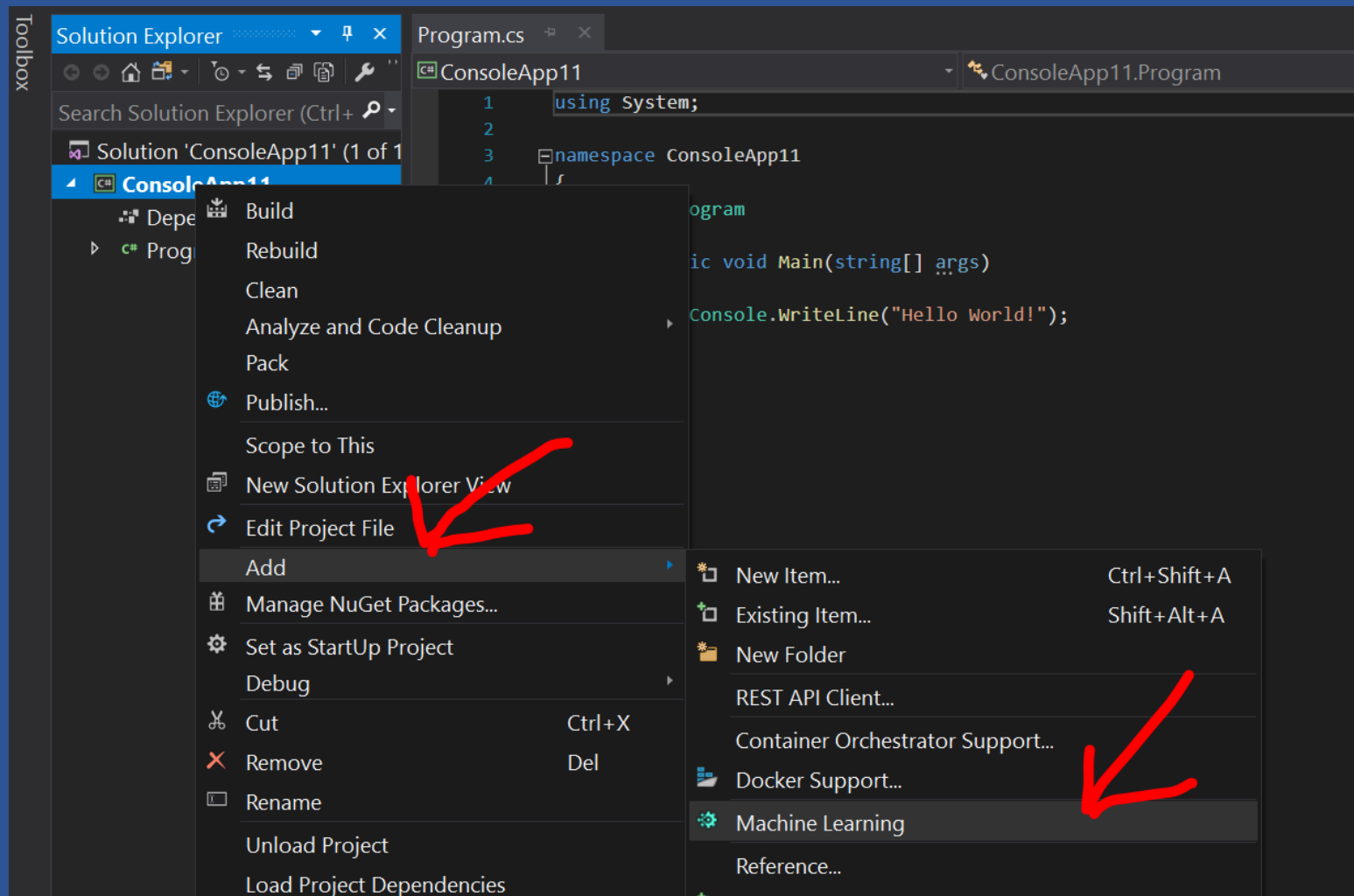
## ML.NET Model Builder (Preview)

**Microsoft** | 24,428 installs |  39,194 downloads | ★★★★★ (12) | Free

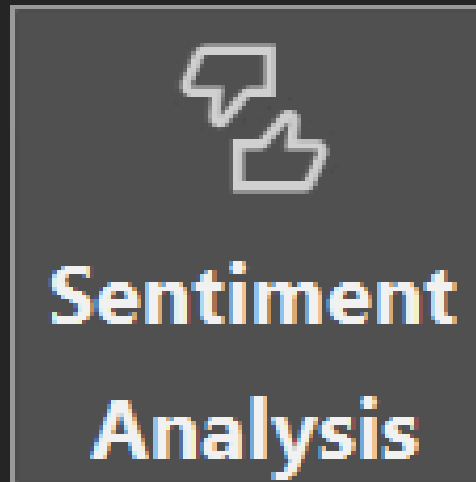
Simple UI tool to build custom machine learning models.

Download

# Create new .NET CORE console project and add Machine Learning



## Pick a Scenario / Custom Scenario



Classify data into 2 categories (binary classification), e.g. predict positive or negative sentiment of comments.

# Set Data File


Data / File spam-train -autoML.tsv

Label column name = class

class 0 = ham 1 = spam

Select a file:  ...

Supported file formats: csv or tsv. Maximum file size: 1 GB.

Column to Predict (Label): 


### Data Preview

class (Label)	message
0	Go until jurong point, crazy.. Available only in bugis n great world la e buffet.
0	Ok lar... Joking wif u oni...
1	Free entry in 2 a wkly comp to win FA Cup final tkts 21st May 2005. Text FA to
0	U dun say so early hor... U c already then say...
0	Nah I don't think he goes to usf, he lives around here though
1	FreeMsg Hey there darling it's been 3 week's now and no word back! I'd like

Task = multiclass-classification

Time = 60 seconds

## Input

Time to train (seconds): 

Start training

## Understand the Train result

### Progress

Start training to see progress and results

Status:	Done
Best Accuracy:	99.07%
Best Algorithm:	LinearSvmBinary
Last Algorithm:	LinearSvmBinary



# Understand evaluation result

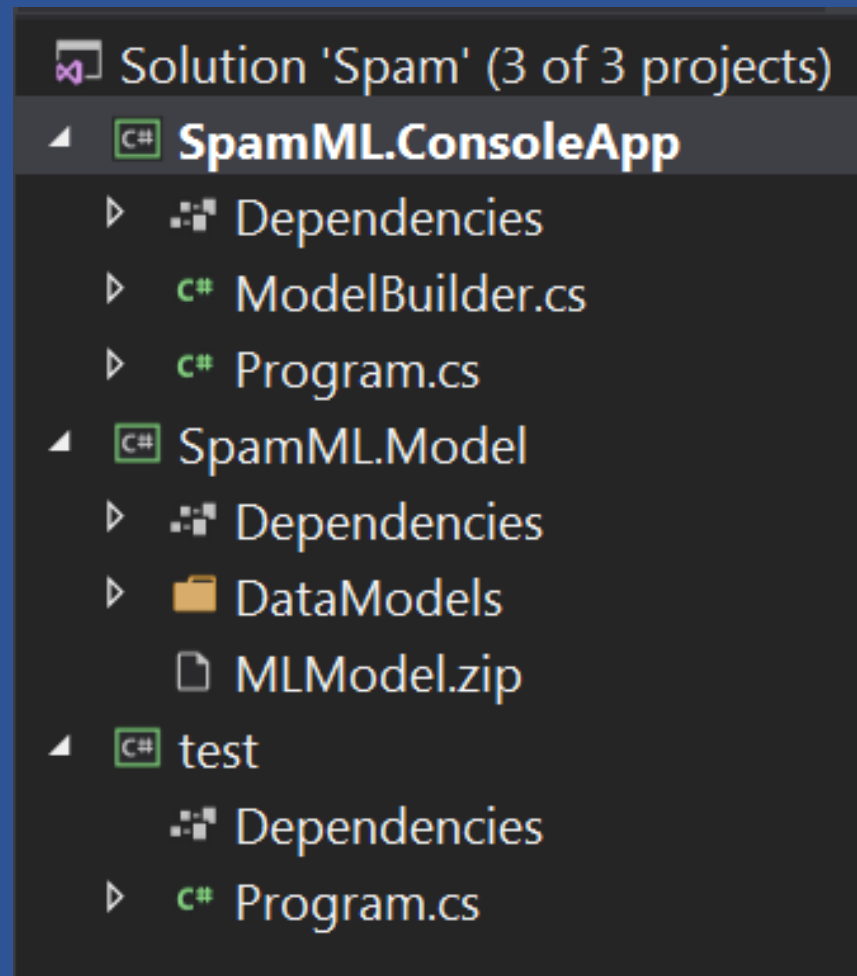
## Output

ML Task: binary-classification  
Dataset: spam-train  
Column to Predict (Label): class  
Best Model: LinearSvmBinary  
Best Model Accuracy: 99.07%  
Training Time: 60.47 seconds  
Models Explored (Total): 19

## Top 5 models explored

Rank	Trainer	Accuracy	AUC	AUPRC	F1-score	Duration
1	LinearSvmBinary	0.9907	0.9937	0.9812	0.9667	0.3
2	SgdCalibratedBinary	0.9884	0.9923	0.9769	0.9580	0.4
3	SgdCalibratedBinary	0.9884	0.9922	0.9768	0.9580	0.4
4	LinearSvmBinary	0.9884	0.9943	0.9832	0.9580	0.4
5	SgdCalibratedBinary	0.9884	0.9914	0.9749	0.9580	0.3

## Examine Code



# Next Step

Write Code to build, train, evaluate, and use  
ML model