Sentiment Analysis in .NET

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Agenda

Machine Learning in .NET

Which libraries or tools do we have in .NET for Machine Learning?

ML.NET

What is the ML.NET framework used for?

Sentiment Analysis

What is the sentiment analysis?

Demo: Spam Detection

Applying Sentiment Analysis to CMS Kit's Commenting Feature
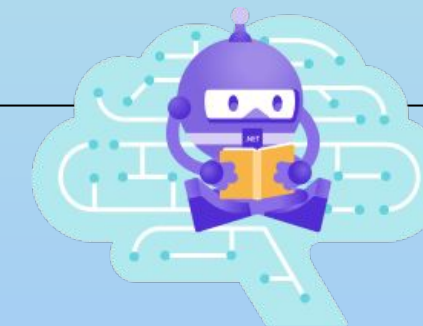
Machine Learning in .NET

ML.NET

https://github.com/dotnet/machinelearning

SciSharp Stack

BotSharp, TensorFlow.NET etc.

Accord.NET

https://github.com/accord-net/framework

Spark

.NET for Apache Spark

ML.NET

What is ML.NET?

- ML.NET is a **machine learning** framework for .NET developers; you can use ML.NET to integrate custom machine learning models into your .NET applications.

- You can use ML.NET for many scenarios, such as **Sentiment Analysis**, **Price Prediction**, **Product Recommendation**, **Image Classification**, **Object Detection**, and more…

Uses AutoML

- ML.NET offers **Model Builder (a simple UI tool)** and **ML.NET CLI** to make it easy to build custom ML Models.

- These tools use **AutoML (Automated ML)**, which refers to the process of automating the end-to-end process of applying machine learning to real-world problems.

Integrations with other popular libraries

- ML.NET is an extensible platform and allows to consume other popular ML Frameworks (**TensorFlow**, **ONNX (Open Neutral Network Exchange)**, **Infer.NET**, and more…).

Sentiment Analysis

★★★★★ **This is a solid phone, it has so many features.**

Reviewed in the United States on April 21, 2024

Color: Light Blue | Style: A15 | Pattern Name: Phone Only | **Verified Purchase**

I like the ðo not disturb driving feature. The apps are easy to find. The battery last almost 2 full days. It charges within an 1 1/2 when battery is below 15%.

Helpful | Report

★☆☆☆☆ **Useless unless connected to wifi**

Reviewed in the United States on January 28, 2024

Color: Black | Style: A25 | Pattern Name: Phone Only | **Verified Purchase**

The phone I received is useless unless it's connected to Wi-Fi. It cannot maintain any data connection. Which means no internet and no phone calls.
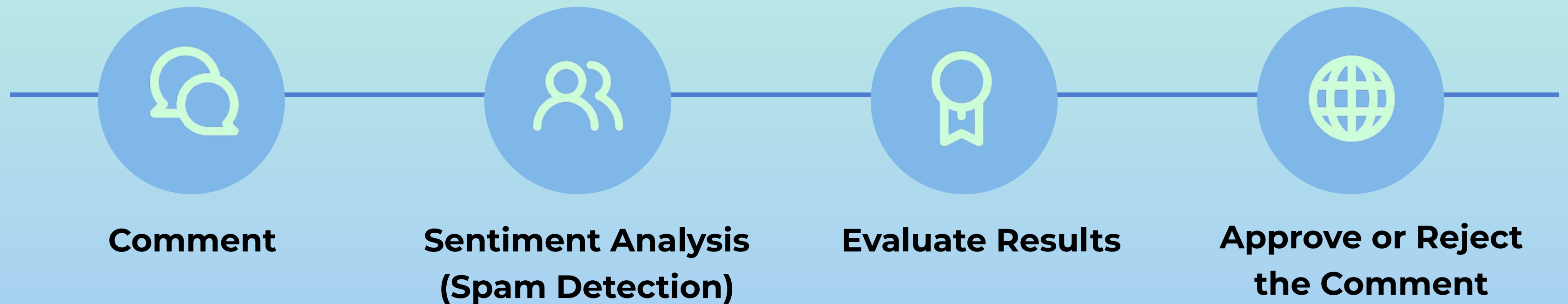
Do not buy this phone!!!

Demo: Applying Sentiment Analysis to CMS Kit's Commenting Feature

Demo: Spam Detection

Comment

Sentiment Analysis (Spam Detection)

Evaluate Results

Approve or Reject the Comment

Repository: https://github.com/EngincanV/SentimentAnalysisDemo

spam_data.csv (485.7 kB)

▲ Category	≡	▲ Message	≡
ham 87% spam 13%		**5157** unique values	
ham		Ok lar... Joking wif u oni...	
spam		Free entry in 2 a wkly comp to win FA Cup final tkts 21st May 2005. Text FA to 87121 to receive entr...	
spam		FreeMsg Hey there darling it's been 3 week's now and no word back! I'd like some fun you up for it s...	

Sentiment Analysis Flow:

1. Load the data

2. Split the data as train and test data

3. Data transformations (transforming to numeric vectors) and choosing the correct algorithm

4. Train the model

5. Predict the sample data

Thank you!