

# TikaAndVisionDL4J

## Tika and Computer Vision powered by Deeplearning4j(DL4J)

- [Tika and Computer Vision powered by Deeplearning4j\(DL4J\)](#)
- [Java/Groovy/Scala example](#)
- [For Python and Tika Server users](#)
- [Large Scale Image Recognition In Spark](#)
- [Configuration options](#)
- [Questions / Suggestions / Improvements / Feedback ?](#)

This page describes a way to make Tika perform image recognition. Tika has many implementations of image recognition parsers. Specifically, this page provides information for an implementation powered by [Deeplearning4j](#), [InceptionNet](#)-V3 model pre-trained on [ImageNet](#) dataset and now with [TIKA-2298](#), the VGG-16 model. Both models can detect a thousand different objects in the images.

The advantage of this particular setting is, this implementation runs inside a Java Virtual Machine (JVM) stack without dependence on any external services. So it is perfect for the users who are trying to run image recognition on a distributed setup like Apache Hadoop or Apache Spark.

Note:

1. This is a work in progress. Inception-V3 was added in Tika 1.15 and VGG-16 in 1.16. 2. At the time of writing, Tika 1.16 was not released. You have to [clone Tika repository](<https://github.com/apache/tika>) and do **mvn clean install**. 3. The rest of the page uses version **1.15-SNAPSHOT**, however, if you are reading this after release, please use **1.15**, **1.16** or newer version.

## Java/Groovy/Scala example

For maven users:

Add Tika-parsers and tika-dl to your project

**Here is an example for Apache Maven users:**

```
{{{#!highlight xml
```

```
<dependencies>
<dependency>
<groupId>org.apache.tika</groupId>
<artifactId>tika-parsers</artifactId>
<version>1.15-SNAPSHOT</version>
</dependency>
<dependency>
<groupId>org.apache.tika</groupId>
<artifactId>tika-dl</artifactId>
<version>1.15-SNAPSHOT</version>
</dependency>
</dependencies>
}}}
```

**A configuration, tika-config.xml, to activate Inception-V3 image recognition model:**

```
{{{#!highlight xml
<properties>
<parsers>
<parser class="org.apache.tika.parser.recognition.ObjectRecognitionParser">
<mime>image/jpeg</mime>
<params>
<param name="topN" type="int">10</param>
<param name="minConfidence" type="double">0.015</param>
<param name="class" type="string">org.apache.tika.dl.imagerec.DL4JInceptionV3Net</param>
</params>
</parser>
</parsers>
</properties>
}}}
```

**A configuration, tika-config.xml, to activate VGG-16 image recognition model:**

Note: Refer to a later section for customizing the config.

```

{{
  //Link new image to HighLink class. Here we are overriding the File class's constructor (JustString string, ImageData imageData)
  //Class constructor
  public File(String fileName, ImageData imageData) {
    super(fileName, imageData);
    //Example File File
    println(Arrays.toString(meta.getValues("OBJECT"))); // This should print
  }
}

```

1. Create file with name **tika-config.xml** by using the content shown above. 2. Clone tika repository and build the tika project 3. Add **tika-df** to classpath of tika server

Refer to [Tika-python](#) for an example usage.

Coming soon! It is being tested here <https://github.com/thammegowda/tika-dl4j-spark-imagrec>

Previously, we have used the three parameters to this parser:

The other important parameters are:

The VALUE string can be:

- For example:

```
1. <param name="modelWeightsPath" type="string">inception-model-weights.h5</param> 2. <param name="
modelWeightsPath" type="string">/usr/share/apache-tika/models/tikainception-model-weights.h5</param> 3. <para
m name="modelWeightsPath" type="string">https://myserver.com/files/apache-tika/models/tikainception-model-weights.h5</param>
```

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## Questions / Suggestions / Improvements / Feedback ?

1. If it was useful, let us know on twitter by mentioning [@ApacheTika](#) 2. If you have questions, let us know by [using Mailing Lists](#) 3. If you find any bugs, [use Jira to report them](#)