ICD-10 Health Code Classification with Watson Natural Language Classifier

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Contents

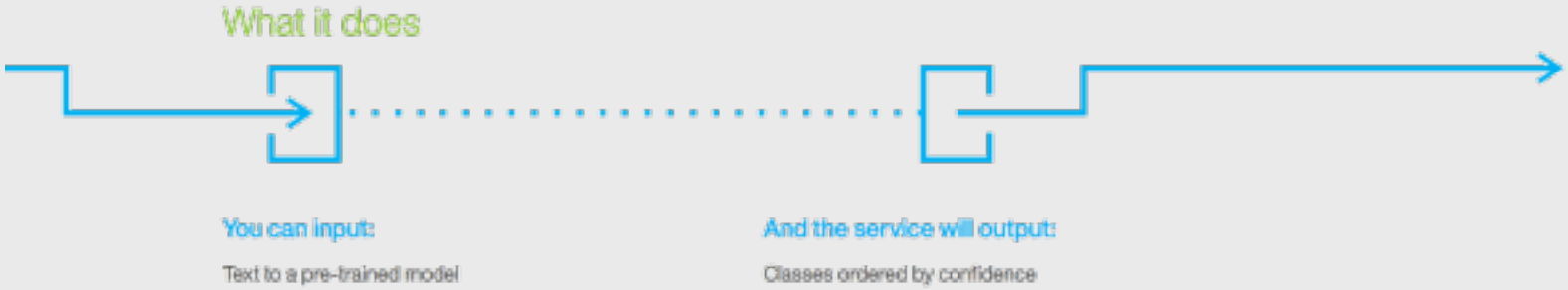
Lab disclaimer: This application is used for demonstrative and illustrative purposes only and does not constitute an offering that has gone through regulatory review.

ICD-10 is the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (**ICD**), a medical classification list by the World Health Organization (WHO).

Watson Natural Language Classifier (NLC)

Data is yours to classify

Categorize social media or analytics data, sort volumes of written content, and identify key skills.



Current Features

Classify Multiple Text Phrases

Classify multiple items with a single API call

DLaaS – Deep Learning as a Service

Train data at faster speeds and in larger quantities (20k).

Multi-Intent Classification

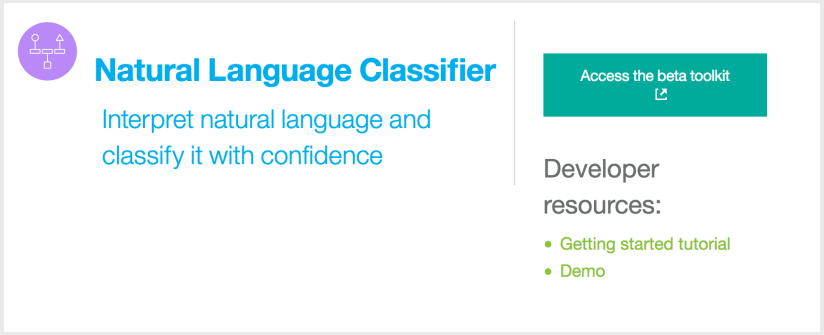
Extract multiple intents from text

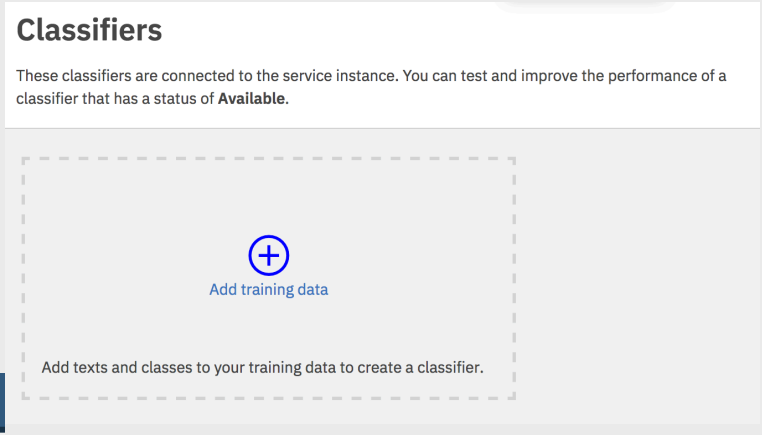
Chain Multiple Classifiers

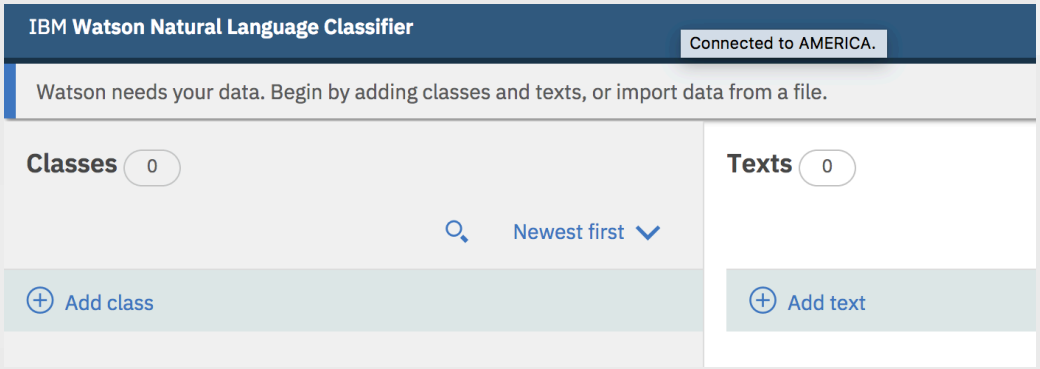
Separate text at classify at multiple levels

Natural Language Classifier – Tooling in Beta

IBM Watson™ Natural Language Classifier uses machine learning algorithms to return the top matching predefined classes for short text input. You create and train a classifier to connect predefined classes to example texts so that the service can apply those classes to new inputs.







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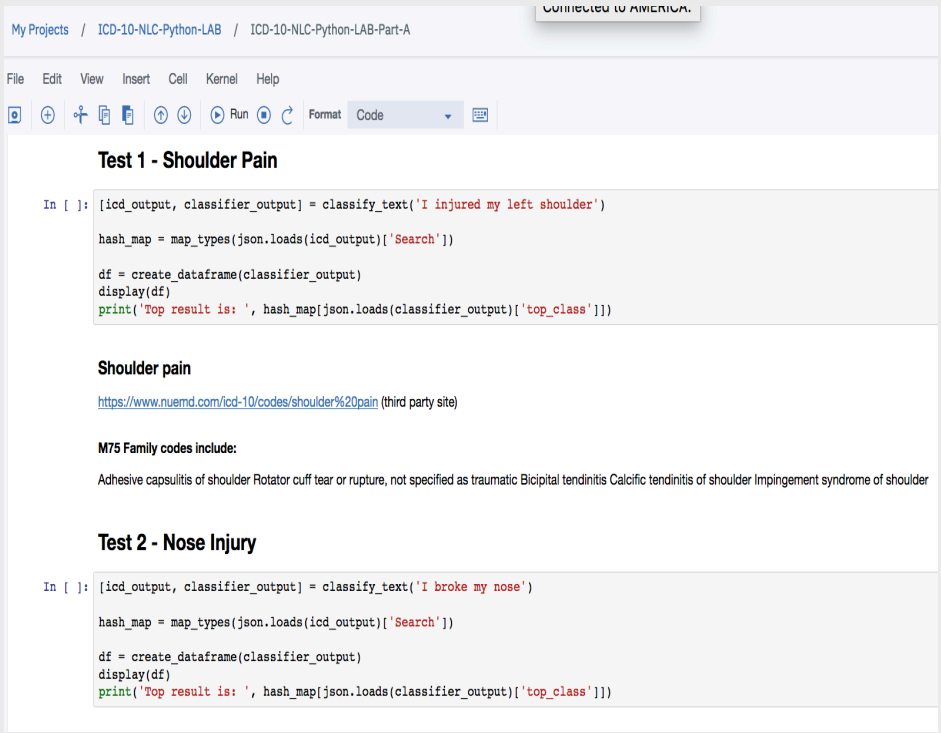
Option #1 – Watson Studio Notebook

A Think2018 Lab - Python Application in Watson Studio / DSX - JuPyter / IPython NotebookLAB

OVERVIEW:
This application was built to demonstrate IBM's Watson Natural Language Classifier (NLC). It uses the Watson Python SDK for IBM Watson to create the classifier, list classifiers, and classify the input text.
We also make use of the freely available ICD-10 API which, given an ICD-10 code, returns a name and description. ICD-10 is the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD), a medical classification list by the World Health Organization (WHO).

This lab and data set is for educational purposes only.
https://www.ibm.com/watson/services/natural-language-classifier/
https://www.ibm.com/watson/developercloud/natural-language-classifier/api/v1

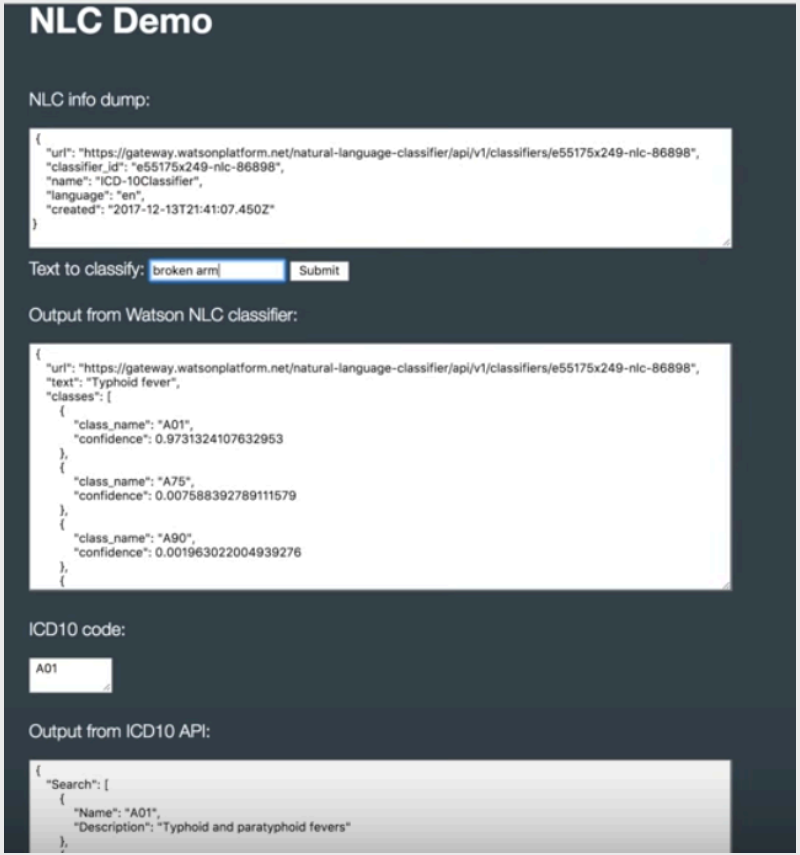


https://github.com/rustyoldrake/ICD-10-NLC-Python-LAB/blob/master/ICD-10-NLC-Python-LAB-Part-A.ipynb

Option #2 – Flask Magic

ICD-10 Python Application in Flask MicroFramework
https://github.com/IBM/nlc-icd10-demo
A simple web app that shows how Watson's Natural Language Classifier (NLC) can classify ICD-10 code. The app is written in Python using the Flask framework and leverages the Watson Developer Cloud Python SDK

https://www.youtube.com/watch?v=N0eKEZxdwsQ&t=358s
Steve Martinelli, an Engineering Manager @ IBM, uses Watson's Natural Language Classifier service to classify health injuries using ICD-10 codes. This is a Python web application based on the Flask microframework and is based on earlier work done by Ryan Anderson.
It uses the Watson Python SDK to create the classifier, list classifiers, and classify the input text. We make use of the free ICD-10 API which, given an ICD-10 code, returns a name and description.



Lets Get Started

Login: datascience.ibm.com
Creds: studentXXXX@ibmlearning.org
Password: (provided at lab)

Console: http://ibm.com/cloud/

Thank you

Resources:

Main page - https://www.ibm.com/watson/services/natural-language-classifier/

Documentation - NLC Documentation and Best Practices Guide

Natural Language Classifier (NLC) Handbook: https://ibm.box.com/s/rdlog2sue79178816s0rabkbi7ifu5vg

Watson Slack Channel - wdc-community.slack.com

PATH A – WATSON STUDIO - Classify health injuries to ICD-10 codes with IBM Watson Natural Language Classifier
https://github.com/rustyoldrake/ICD-10-NLC-Python-LAB/blob/master/ICD-10-NLC-Python-LAB-Part-A.ipynb

PATH B – Classify health injuries to ICD-10 codes with IBM Watson Natural Language Classifier
This application is a Python web application based on the Flask microframework
https://github.com/IBM/nlc-icd10-demo
https://www.youtube.com/watch?v=N0eKEZxdwsQ&t=358s