

Harry Potter

AND THE



elastic
PYTHON CLIENTS

ILIA FEROLI
DEVELOPER ADVOCATE @ELASTIC



Why Harry Potter?

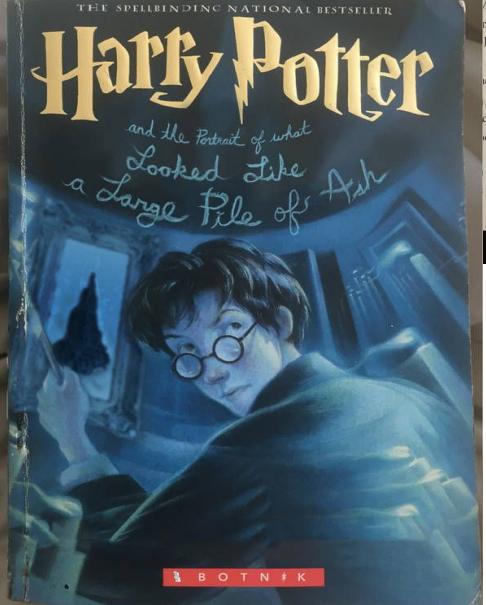
CAPITOLUL I Băiatul de odinoară

Dommul și doamna Dursley, de pe Alcea Boschetelor, numărul 4, erau foarte mândri că erau complet normali, slava Domnului! Erau ultimii oameni de la care te-ai fi aşteptat să fie amestecat în ceva straniu sau misterios, fiindcă pur și simplu nu credeau în astfel de aiurelli!

Domnul Dursley era directorul unei firme numite Grunnings, care făcea burghezi. Era un bărbat inalt, matăhălos, aproape fără gât, dar avea o mustăță foarte bogată. Doamna Dursley era blondă, foarte slabă, și se mindea cu un gât care avea cam de două ori lungimea normală, ceea ce îi era de mare folos, deoarece își petrecea majoritatea timpului uitându-se peste gard, în curile vecinilor, șocând tot ce se putea. Cei doi aveau un fiu pe nume Dudley, care era cel mai rezist copil din lume (după părearea lor).

Familia avea tot ce săia și putut dori, dar mai avea și un secret, pe care nu voia în rupțul capului să-l descoreze cineva! Soților Dursley le era insuportabil chiar și gândul că cineva ar putut afla vrednodată familia Potter. Doamna Potter era sora doamnei Dursley, dar nu se mai văzusează de către ani buni. De fapt, doamna Dursley preținea chiar că nu avea nici o soră, deoarece doamna Potter și soțul ei bun-de-nimic erau complet opuși felului. Familia Dursley se cuntrumăra numai la gândul că vecinii pot să vedea vrednodată rudeli. Familia Potter avea și ea domnul și doamna Dursley nuă văzuseără niciodată și nimic să ceva. Copilul era un alt motiv care îi tinea la distanță: jocul micul lor Dudley cu un astfel de copil??

Când domnul și doamna Dursley se treziră în acea mohorăță și tristă, în care începe povestea noastră, în rul intunecat, nimic nu prevestea lucruurile străini și care urmă să se petreacă în întreaga țară. Domnul aduna ceva, în timp ce își lăua din sfîrșit cea mai amănuță pentru o zi de muncă, desigur! Doamna Dursley se veselă, în timp ce se străduia să potolească pe mici, care nu mai conțineau cu tipetele.



CHAPTER ONE



THE BOY WHO LIVED

Mr. and Mrs. Dursley, of number four, Privet Drive, were proud to say that they were perfectly normal, thank you very much. They were the last people you'd expect to be involved in anything strange or mysterious, because they just didn't hold with such nonsense.

Mr. Dursley was the director of a firm called Grunnings, which made drills. He was a big, beefy man with hardly any neck, al-

most round in the middle, with a large, squarish nose, and very thick lips. He had a square jawline and dark hair, cut in a very flat-top. He was wearing a dark blue suit, a light blue shirt, and a dark blue tie. He was standing in a room with a polished floor and white walls. There were several other people in the room, but they were all much smaller than he was. He was looking down at a small, round, red-faced baby who was lying in a round, patterned bed.

"It's a boy!" said Mrs. Dursley, looking very pleased. "We're going to call him Harry."

"I don't care if it's a boy or a girl," said Mr. Dursley. "It's still going to be a useless little -"

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

"It's a boy!" said Mrs. Dursley again, looking very pleased.

"It's a boy!" said Mr. Dursley again, looking slightly less pleased.

AND THE



elastic

PYTHON CLIENTS

Client(s)??

Python Elasticsearch client

v8.10.1

Search docs

Quickstart

Elasticsearch API Reference

Exceptions & Warnings

Using Asyncio with Elasticsearch

Helpers

Release Notes



Read the Docs uses the official Elasticsearch Service on the Elastic Cloud. [Take it for a spin...](#)

Ad by EthicalAds · ⓘ

Python Elasticsearch Client

[Edit on GitHub](#)

Python Elasticsearch Client

Official low-level client for Elasticsearch. Its goal is to make writing related code in Python; because of this it tries to

Installation

Install the `elasticsearch` package with `pip`:

```
$ python -m pip install elasticsearch
```

If your application uses `async/await` in Python you can also

```
$ python -m pip install elasticsearch[async]
```

Read more about [how to use asyncio with this package](#).

Compatibility

Language clients are forward compatible; meaning they work with all or equal minor versions of Elasticsearch. Elasticsearch clients are compatible with default distributions and without any configuration.

If you have a need to have multiple versions installed at the same time, released as `elasticsearch2`, `elasticsearch5` and `elasticsearch7`.

elasticsearch-dsl.readthedocs.io/en/latest/

Elasticsearch DSL

latest

S

L

e

s

er

ch

u

re

m

en

t

o

n

g

u

g

u

g

u

g

elasticsearch-dsl.readthedocs.io/en/latest/

Elasticsearch DSL

[Edit on GitHub](#)

Elasticsearch DSL

Elasticsearch DSL is a high-level library whose aim is to help with writing and running queries against Elasticsearch. It is built on top of the official low-level client (`elasticsearch-py`).

It provides a more convenient and idiomatic way to write and manipulate queries. It stays close to the Elasticsearch JSON DSL, mirroring its terminology and structure. It exposes the whole range of the DSL from Python either directly using defined classes or a queryset-like expressions.

It also provides an optional wrapper for working with documents as Python objects: defining mappings, retrieving and saving documents, wrapping the document data in user-defined classes.

To use the other Elasticsearch APIs (eg. cluster health) just use the underlying client.

Installation

```
pip install elasticsearch-dsl
```

Examples

Please see the `examples` directory to see some complex examples using `elasticsearch-dsl`.

```
from elasticsearch import Elasticsearch
client = Elasticsearch("https://localhost:9200")

response = client.search(
    index="my-index",
    body={
        "query": {
            "bool": {
                "must": [{"match": {"title": "python"}}],
                "must_not": [{"match": {"description": "beta"}}],
                "filter": [{"term": {"category": "search"}}]
            }
        },
        "aggs" : {
            "per_tag": {
                "terms": {"field": "tags"},
                "aggs": {
                    "max_lines": {"max": {"field": "lines"}}
                }
            }
        }
    }
)

for hit in response['hits']['hits']:
    print(hit['_score'], hit['_source']['title'])

for tag in response['aggregations']['per_tag']['buckets']:
    print(tag['key'], tag['max_lines']['value'])
```

on GitHub

```
from elasticsearch import Elasticsearch
from elasticsearch_dsl import Search

client = Elasticsearch("https://localhost:9200")

s = Search(using=client, index="my-index") \
    .filter("term", category="search") \
    .query("match", title="python") \
    .exclude("match", description="beta")

s.aggs.bucket('per_tag', 'terms', field='tags') \
    .metric('max_lines', 'max', field='lines')

response = s.execute()

for hit in response:
    print(hit.meta.score, hit.title)

for tag in response.aggregations.per_tag.buckets:
    print(tag.key, tag.max_lines.value)
```

Setup the Embedding Model

For this example, we're using `all-MiniLM-L6-v2`, part of the `sentence_transformers` library. You can read more about this model on [Huggingface](#).

In [2]:

```
from sentence_transformers import SentenceTransformer
model = SentenceTransformer('all-MiniLM-L6-v2')
```

Initialize the Elasticsearch client

Now we can instantiate the [Elasticsearch python client](#), providing the cloud id and password in your dep

In [3]:

```
from elasticsearch import Elasticsearch
from getpass import getpass

CLOUD_ID = getpass("Elastic Cloud ID")
CLOUD_PASSWORD = getpass("Elastic Password")

# Create the client instance
client = Elasticsearch(
    cloud_id=CLOUD_ID,
    basic_auth=("elastic", CLOUD_PASSWORD)
)
```

If you're running Elasticsearch locally or self-managed, you can pass in the Elasticsearch host instead. Run this code to Elasticsearch locally.

Confirm that the client has connected with this test.

In [4]:

```
print(client.info())

{'name': 'instance-0000000001', 'cluster_name': 'ad402eb9a59041458b8edfc021e91caf', 'cl
KZQsk9lg', 'version': {'number': '8.10.2', 'build_flavor': 'default', 'build_type': 'dc
8ce62365be9b1aca96427de4622e970e9e', 'build_date': '2023-09-19T08:16:24.564900370Z', 'b
ne_version': '9.7.0', 'minimum_wire_compatibility_version': '7.17.0', 'minimum_index_co
0'}, 'tagline': 'You Know, for Search'}
```

“classic”

DSL

```
# Define a default Elasticsearch client
connections.create_connection(hosts="https://localhost:9200")

class Article(Document):
    title = Text(analyzer='snowball', fields={'raw': Keyword()})
    body = Text(analyzer='snowball')
    tags = Keyword()
    published_from = Date()
    lines = Integer()

class Index:
    name = 'blog'
    settings = {
        "number_of_shards": 2,
    }

    def save(self, **kwargs):
        self.lines = len(self.body.split())
        return super(Article, self).save(**kwargs)

    def is_published(self):
        return datetime.now() > self.published_from
```



eland

eland 8.10.1
documentation

Search

Hide Search Matches

[API Reference](#)



[Machine Learning](#)



[Examples](#)



[Development](#)



Eland: DataFrames and Machine Learning backed by Elasticsearch

Date: Nov 06, 2023 **Version:** 8.10.1

Useful links: [Source Repository](#) | [Issues & Ideas](#) | [Q&A Support](#)

Eland is a Python Elasticsearch client for exploring and analyzing data in Elasticsearch with a familiar Pandas-compatible API.

Where possible the package uses existing Python APIs and data structures to make it easy to switch between numpy, pandas, scikit-learn to their Elasticsearch powered equivalents. In general, the data resides in Elasticsearch and not in memory, which allows Eland to access large datasets stored in Elasticsearch.

Installing Eland

Eland can be installed from [PyPI](#) via pip:

```
$ python -m pip install eland
```

Eland Imports PyTorch Models

The screenshot shows the Hugging Face website's search interface. The search bar at the top contains the query "Models". Below the search bar, there are several filters and categories: "Task" (e.g., Fill Mask, Question Answering, Summarization, Text Classification, Text Generation, TokenClassification, Translate, Zero Shot Classification), "Libraries" (e.g., PyTorch, TensorFlow, JAX), "Datasets" (e.g., common_gen, booksarpa, criteo), "Languages" (e.g., English, French, German, Spanish), "Licenses" (e.g., Apache-2.0, MIT, CC-BY-NC), and "Other" (e.g., AutoTokenizer, GPT2, GPT3). The main content area displays a grid of model cards, each with a thumbnail, name, description, and download count. Some visible models include "bert-base-uncased", "distilbert-base-uncased", "roberta-base", "t5-base", "mlmmlmfinetuned-t5-en", "bert-base-multilingual-cased", "distilbert-base-uncased-finetuned-sst-2-english", "xlm-roberta-base", "distilbert-base-uncased", and "sentence-transformers/all-MiniLM-L6-v2".



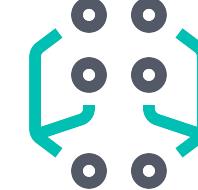
A terminal window on a Mac OS X desktop. The command entered is:

```
$ eland_import_hub_model  
--url https://Cluster_URL  
--hub-model-id bert_model  
--task-type text_embedding  
--start
```

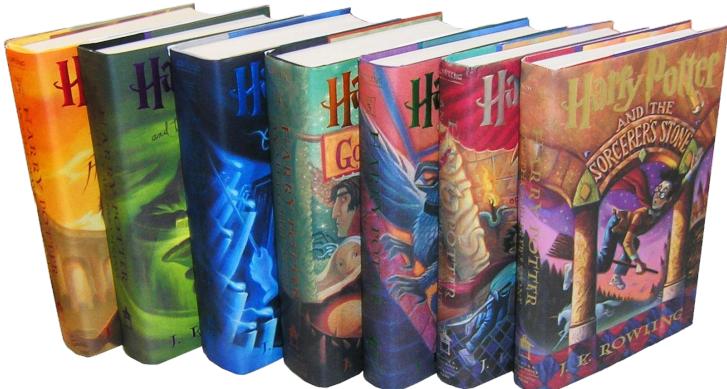


eland

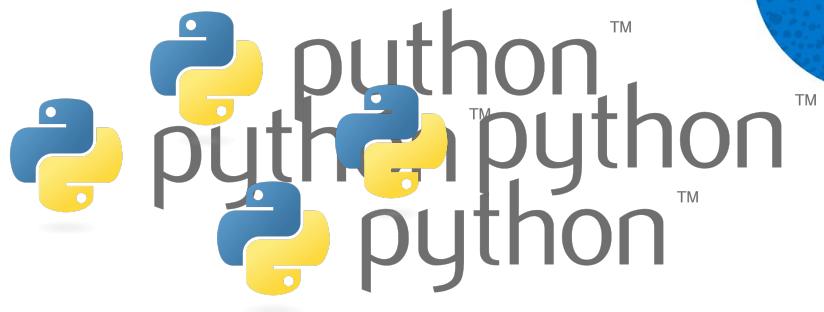
The screenshot shows the Elastic Model Management interface. The top navigation bar includes "Overview", "Anomaly Detection", "Data Frame Analytics", "Model Management", "Data Visualizer", and "Settings". The "Model Management" tab is selected. Below it, the "Trained Models" section is shown with the heading "EXPERIMENTAL". A table lists several trained models, each with a status indicator (e.g., started, failed), a "Description" column, and a "Created at" timestamp. The models listed include "bert-base-uncased", "distilbert-base-uncased", "roberta-base", "t5-base", "mlmmlmfinetuned-t5-en", "bert-base-multilingual-cased", "distilbert-base-uncased-finetuned-sst-2-english", "xlm-roberta-base", "distilbert-base-uncased", and "sentence-transformers/all-MiniLM-L6-v2".



Inference, not training

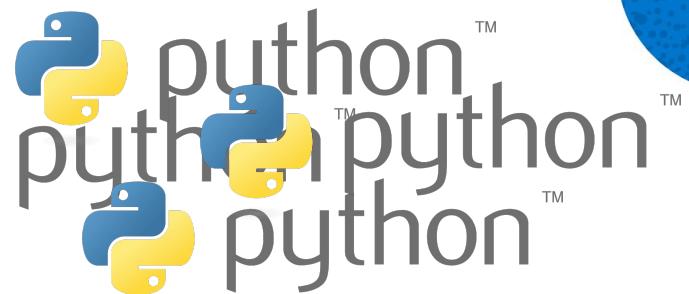
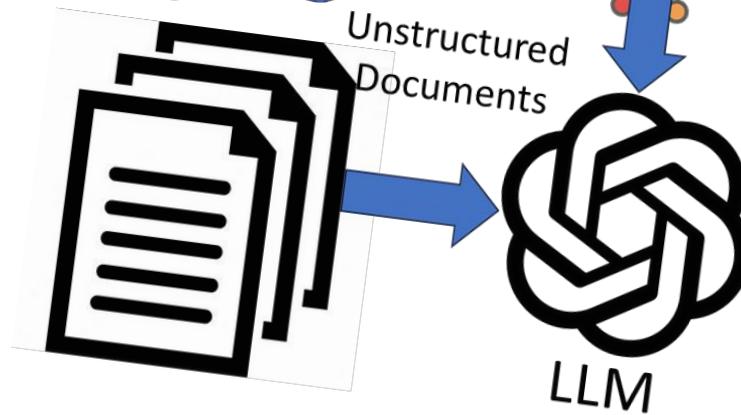
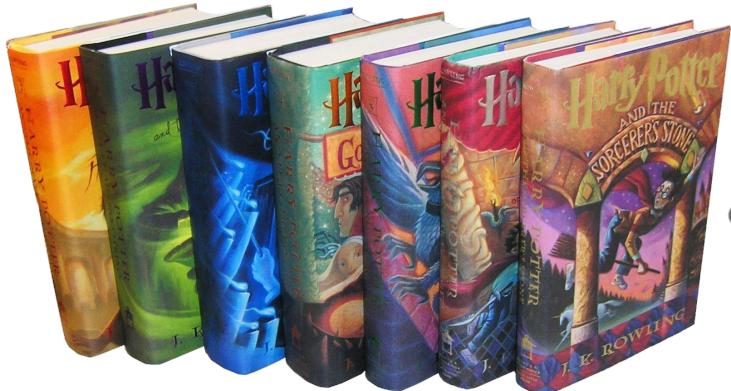


+



Books = unstructured data gold mine

Chaos = makes Devs want to build tutorials



Demo time

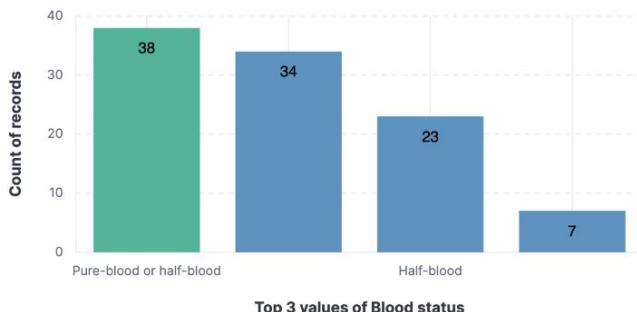


Filter your data using KQL syntax

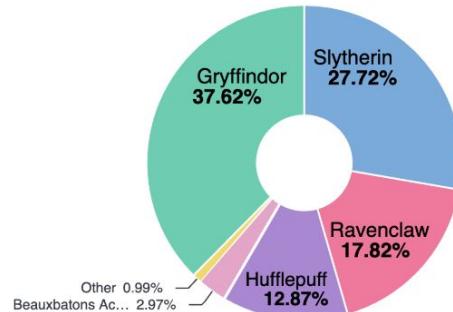
Last 15 minutes Refresh

Harry Potter AND THE elastic SEARCH ENGINE

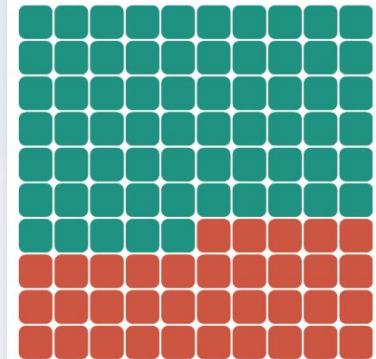
Blood Status Counts



School Houses



Wizard Gender



People

Count of records
140

Prompt : "shouldn't have said that"

Hagrid: I shouldnt have said that

Hagrid: I should not have said that

Hagrid: I should not have said that

Hagrid: Shouldnta said that No more questions

Neville: She said that shed been in there all afternoon
crying

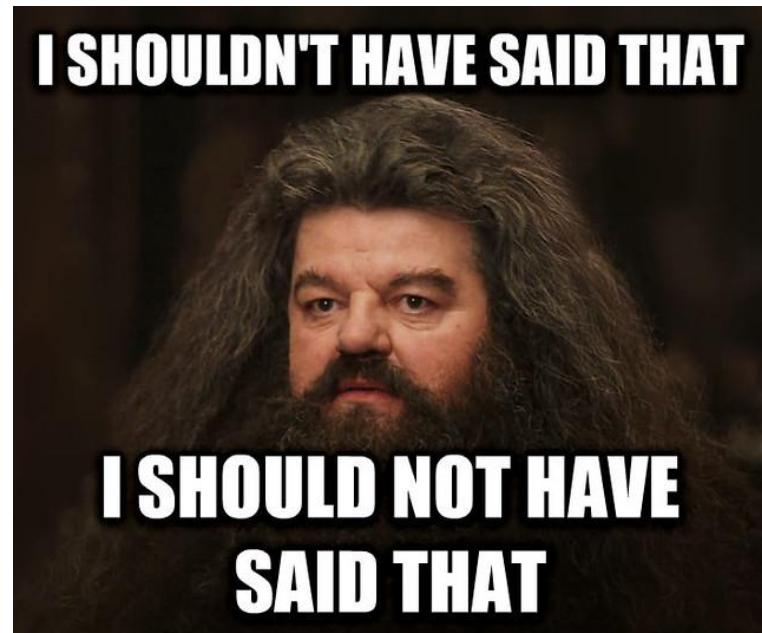
Hagrid: I shouldnt have told you that

Hagrid: I shouldnt have told you that

Hagrid: I shouldnt have told you that

Harry: Will I have to wear that too

Neville: Parvati Patil said that she wouldnt come out of
the girls bathroom



Supported 3rd Party NLP Models

Architectures:

- BERT
- BART
- DPR bi-encoders
- DistilBERT
- ELECTRA
- MobileBERT
- RoBERTa
- RetriBERT
- MPNet
- SentenceTransformers bi-encoders
- XLM-RoBERTa

Types:

- **Fill-mask models**
- **Named Entity Recognition**
- **Question Answering**
- **Embeddings**
- **Text Similarity**
- **Text Classification (i.e. sentiment)**
- **Zero-shot text classification**

Elastic's range of supported NLP models

Fill mask model

Mask some of the words in a sentence and predict words that replace masks

Named entity recognition model

NLP method that extracts information from text

Text embedding model

Represent individual words as numerical vectors in a predefined vector space

Text classification model

Assign a set of predefined categories to open-ended text

Question answering model

Model that can answer questions given some or no context

Zero-shot text classification model

Model trained on a set of labeled examples, that is able to classify previously unseen examples

Third party fill-mask models

- BE
- Dis
- MP
- Ro

Third party text classification models

- BERT base uncased emotion

Third party named entity recognition models

- BERT base NER
- Dis
- Dis
- Dis
- Fin
- TV

Third party question answering models

- All MNQNet base v2
- BER
- Dist
- Elec
- Mul
- Tiny

Third party text embedding models

Text Embedding models are designed to work with specific scoring functions based on the type of embeddings.

Third party zero-shot text classification models

- BART large mnli
- DistilBERT base model (uncased)
- DistilBart MNLI
- MobileBERT: a Compact Task-Agnostic BERT for Resource-Limited Devices
- NLI DistilRoBERTa base
- NLI RoBERTa base
- SqueezeBERT

Sentiment Analysis

(Text Classification)

Most Negative Lines in the First 3 Movies

They're the worst sort of
Muggles imaginable

Pathetic

How disappointing

Much worse

Well its not very good is it

Much much worse

You're a mess Harry

Most Positive Lines in the First 3 Movies

Marvelous Absolutely very
very enjoyable Parvati

Wonderful Neville wonderful

Here Have a nice
summer

I still think it was
brilliant

Quite remarkable
yes Wonderful
wonderful

Together well do
extraordinary things

Beautiful day

Embeddings

& ELSER

Magic

Vernon: Theres no such thing as magic

Hermione: Oh are you doing magic

GILDEROY LOCKHART: This is just like magic

Hagrid: Strickly speaking Im not allowed to do magic

HARRY: Im not allowed to use magic outside of school

Wand

GILDEROY LOCKHART: Wands at the ready

Harry: I still need a wand

Harry: And who owned that wand

RON: My wand Look at my wand

LUPIN: Wand at the ready Ron

Harry Potter

Whispers: Harry Potter, score 1.0,
McGonagall: Harry Potter, score 1.0',
McGonagall: Harry Potter, score 1.0',
VERNON: Harry Potter, score 1.0',
PHOTOGRAPHER: Harry Potter, score 1.0'

Dumbledore

Hermione: Dumbledore, score 1.0,
HARRY: Dumbledore, score 1.0,
LUCIUS MALFOY: Dumbledore, score 1.0',
FRED: Dumbledore, score 1.0,
HARRY: But Dumbledore, score 0.9646542'

What do they fear

LUPIN: That suggests what you fear the most is fear itself,

Hagrid: Anything you couldnt explain when you were angry or scared

LUPIN: Concentrate Face your fear

MR WEASLEY: You are in danger

MCGONAGALL: Our worst fear has been realized

Who is the smartest

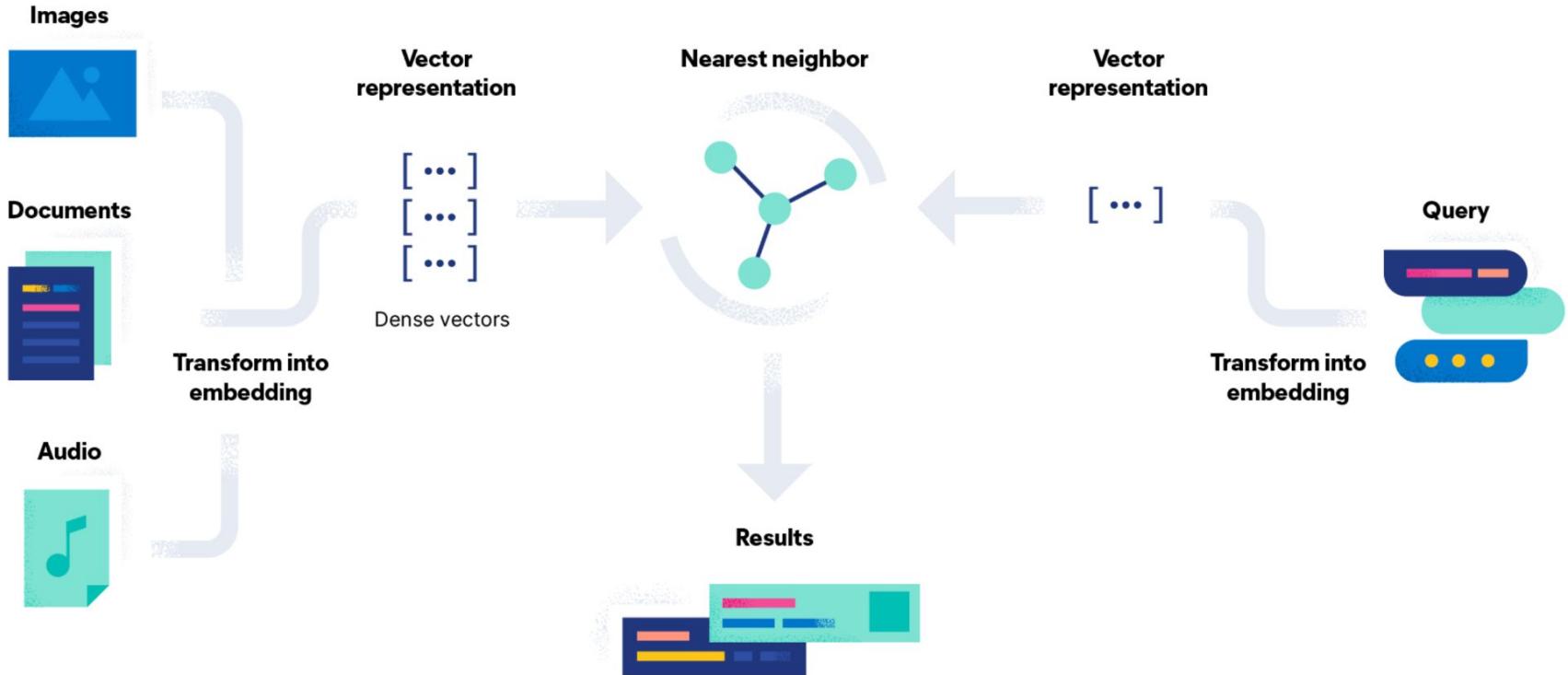
GEORGE: But not clever enough

Dumbledore: That is one of my more brilliant ideas

Petunia: Dont be so stupid

Hermione: What an idiot

PETTIGREW: Sweet clever girl Surely you wont



The finale

Semantic search: "brave"

```
query={  
  "Text_expansion": {  
    "ml.tokens": {  
      "model_id": ".elser_model_1",  
      "Model_text": "brave" } } }
```

LUPIN: Be **brave**,

LUCIUS MALFOY: You must be very **brave** to mention his name,

Sorting Hat: Plenty of **courage** I see,

Dumbledore: And finally it takes a great deal of **bravery** to stand up to your enemies but a great deal more to stand up to your friends,

Voldemort: Haha **Bravery** Your parents had it too,

Semantic search: "brave" & Sentiment : Negative

```
query={  
  "bool": {  
    "should": [{  
      "text_expansion": {  
        "ml.tokens": {  
          "model_id": ".elser_model_1",  
          "model_text": "brave"} } , }],  
    "must": [ {  
      "match" : {  
        "sentiment.predicted_value":  
        "NEGATIVE"  
      } } ] } })
```

LUPIN: Dumbledore has already risked enough on my behalf

LUPIN: That suggests what you fear the most is fear itself

Hagrid: Fine Just so you know hes a bloody coward

SNAPE: Do I detect a flicker of fear

MCGONAGALL: Our worst fear has been realized

Semantic search: "brave"
& Sentiment : Negative
& Exclude term: "fear"

```
query={  
  "bool": {  
    "should": [{  
      "text_expansion": {  
        "ml.tokens": {  
          "model_id": ".elser_model_1",  
          "model_text": "brave"} } , }],  
    "must": [{  
      "match" : {  
        "sentiment.predicted_value":  
        "NEGATIVE" } }],  
    "Must_not": [{  
      "term": {  
        "Sentence": "fear"  
      } }]
```

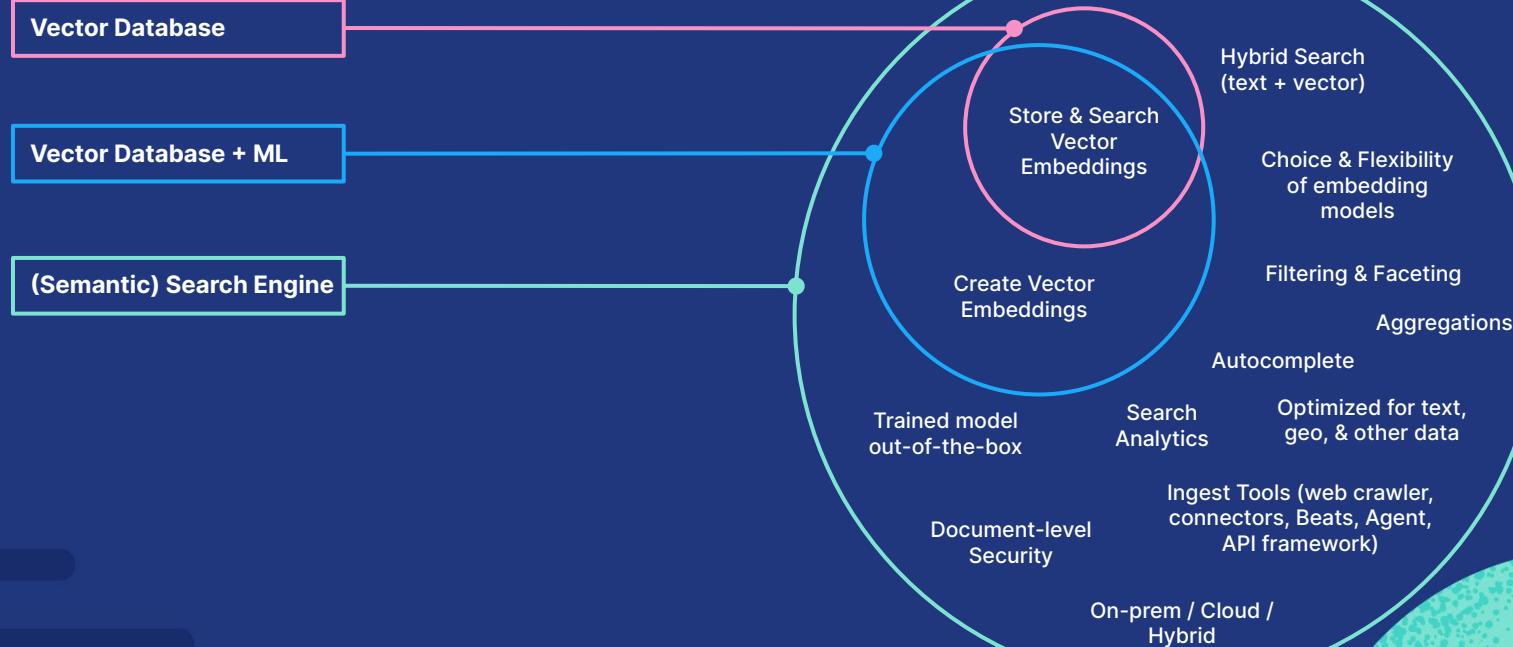
LUPIN: Dumbledore has already risked enough on my behalf

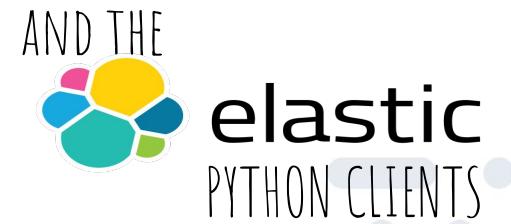
Hagrid: Fine Just so you know hes a bloody coward

GILDEROY LOCKHART: You may find yourselves facing your worst fears in this room

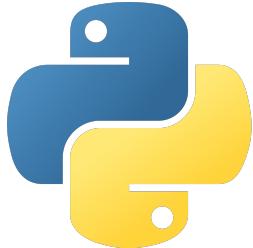
Hagrid: What if the other dragons are mean to him

TOM RIDDLE: Im afraid I cant do tha



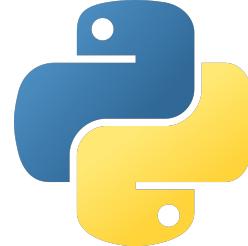


```
pip install elasticsearch
```



"Lightweight" Python Client
curly & square brackets

```
pip install  
elasticsearch-dsl
```



"High-level" Python Client
objects, classes, functions



Pandas-compatible API +
Import Models for ML & NLP

eland

ELSER – Elastic Learned Sparse EncodeR
= Semantic search model





Thank you!