

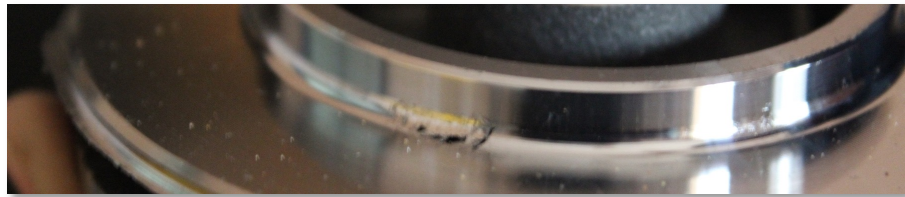
Tornado^{AI}

start small grow big

Human in the Loop Machine Learning Data Labelling

Use Case

Manufacturing Data Labelling for Quality inspection

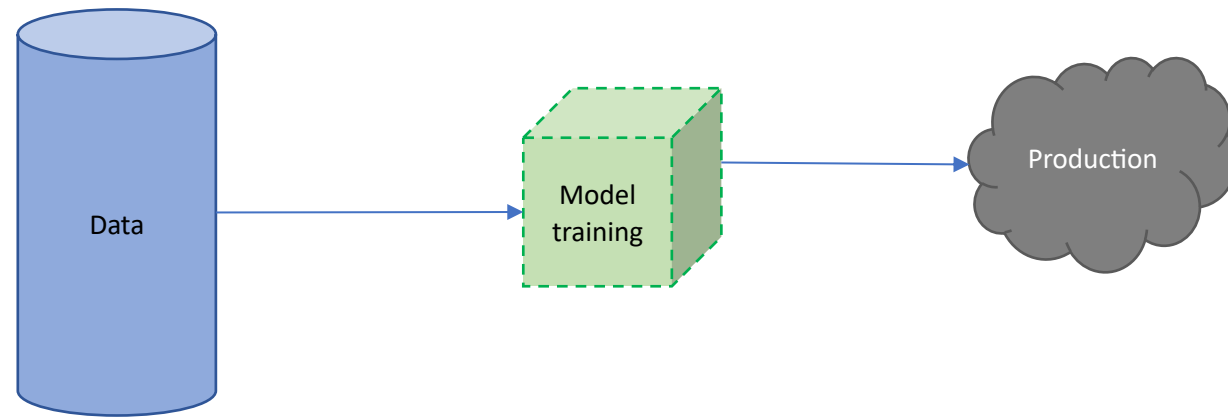


Content

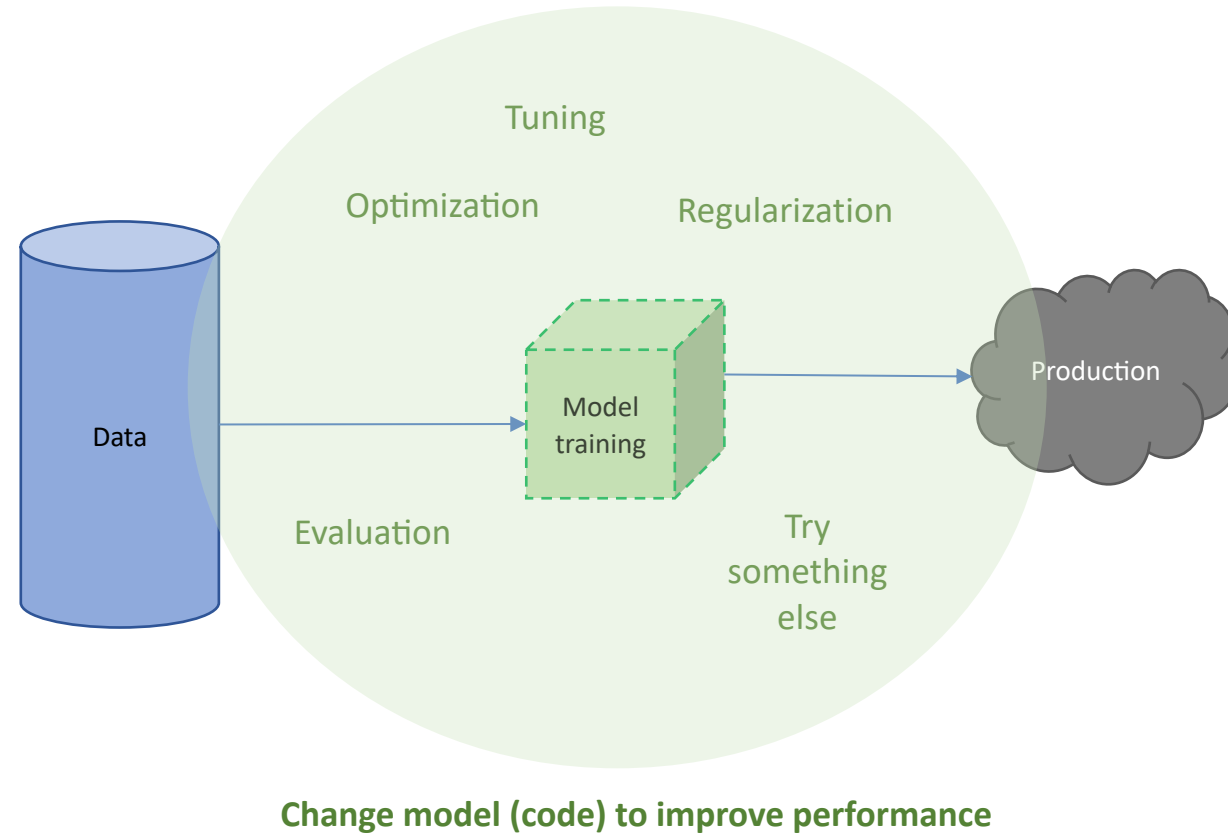
- 1 On data centric artificial intelligence
- 2 Human in the loop machine learning
- 4 Tornado AI
- 5 Manufacturing Use case
- 6 Demo
- 7 Use Tornado
- 8 Contribute to Tornado



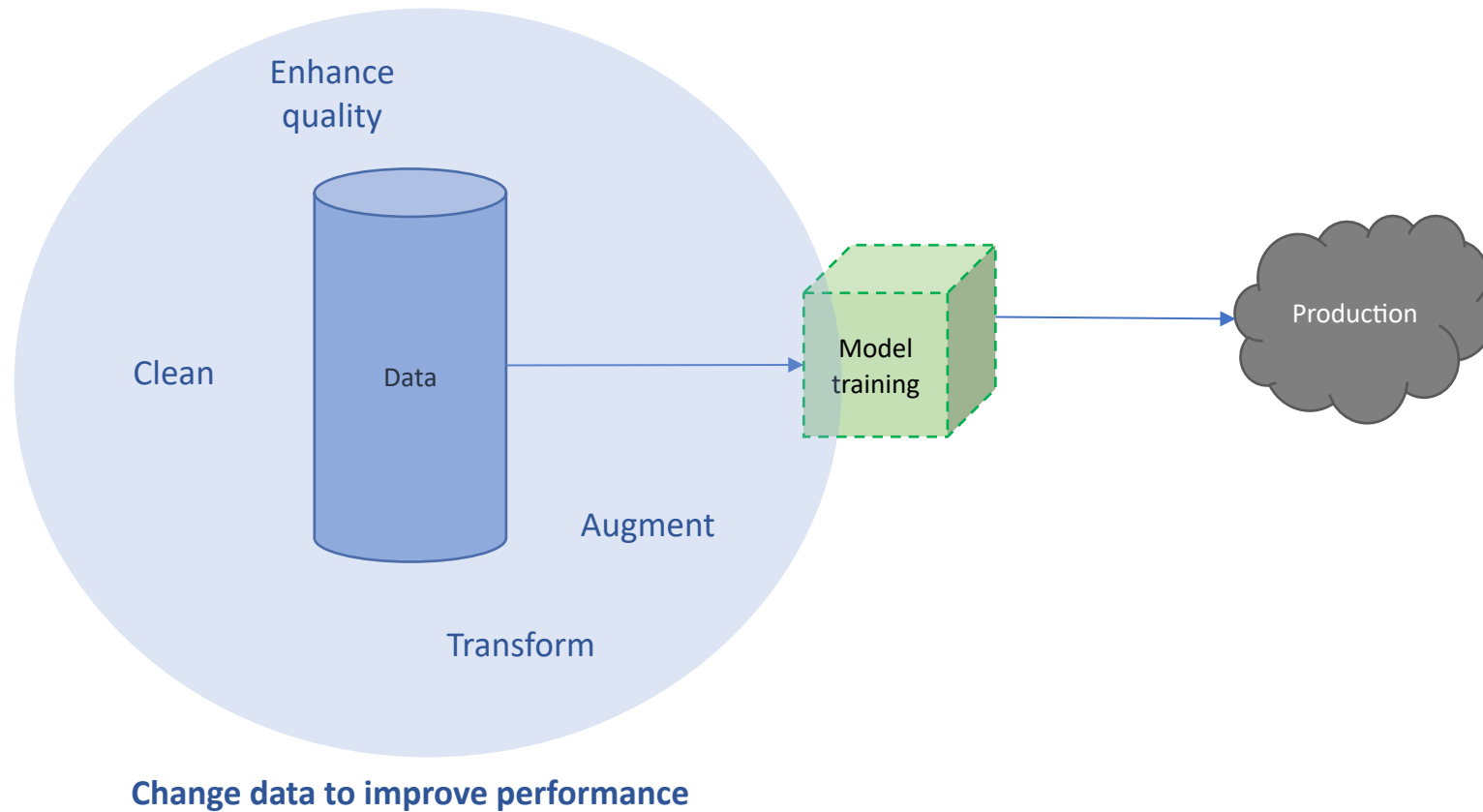
Data centric artificial intelligence



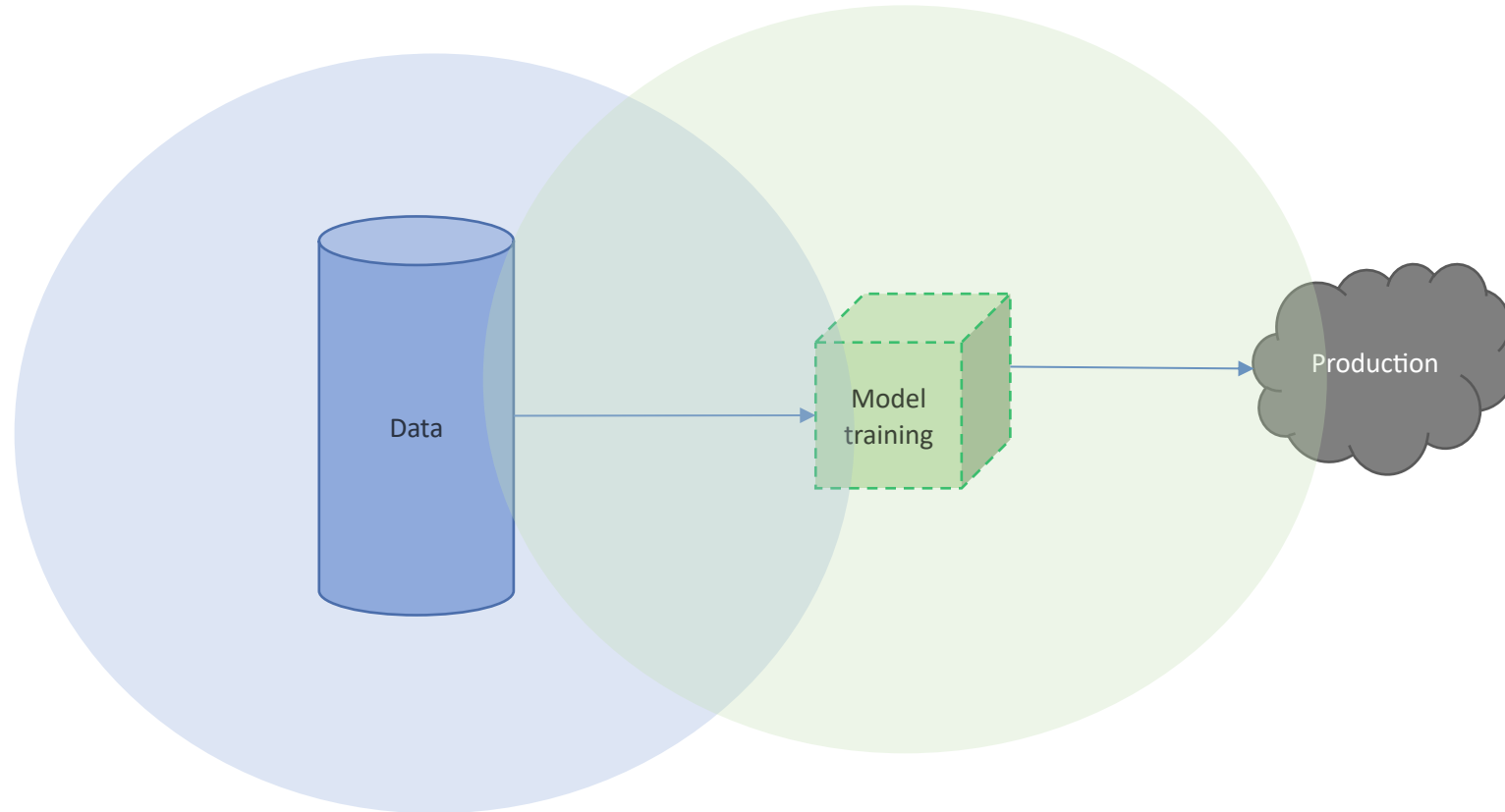
Data centric artificial intelligence



Data centric artificial intelligence



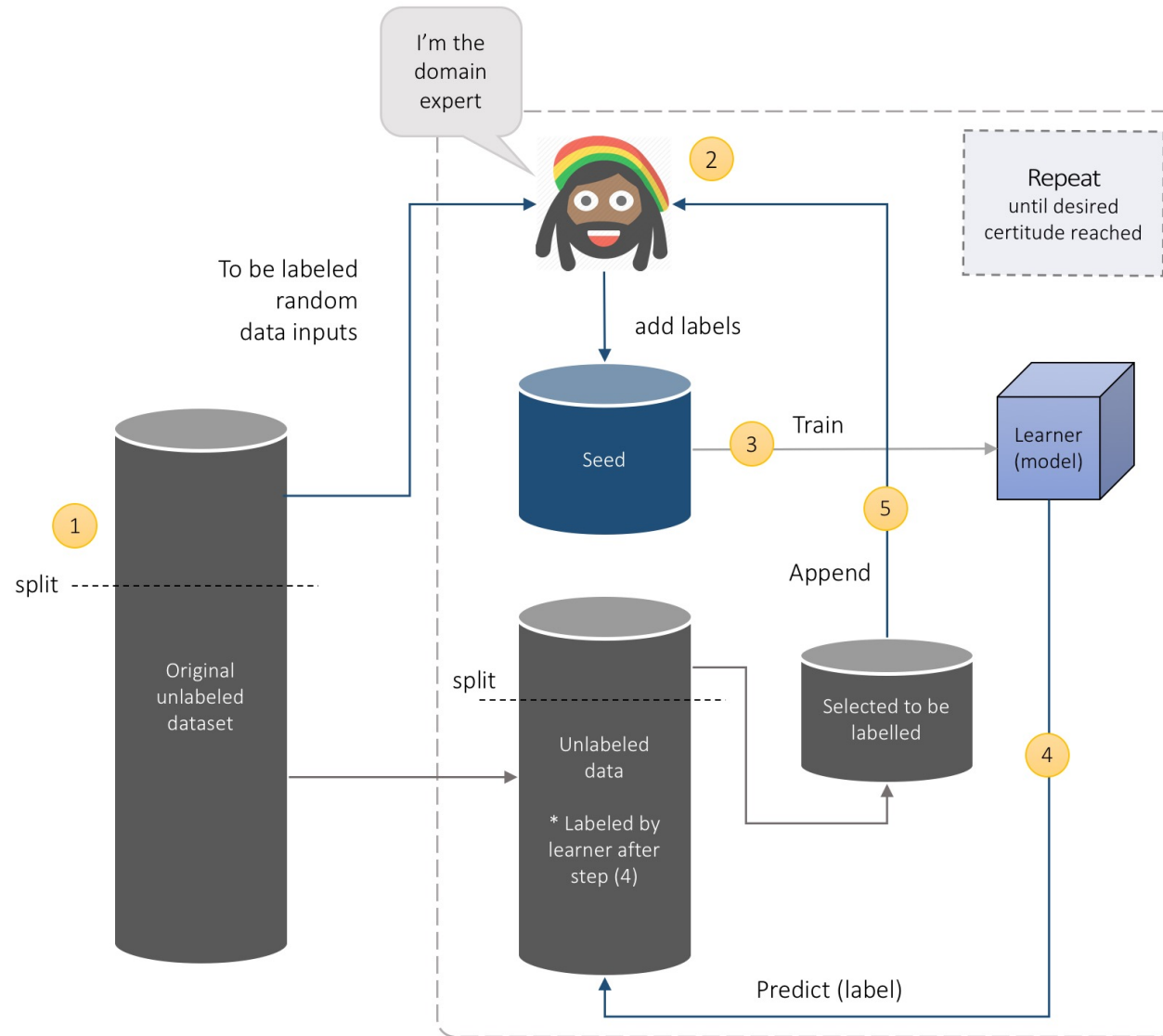
Data centric artificial intelligence



Hybrid approach is the key
In reality this is what we call Data
Centric Ai!

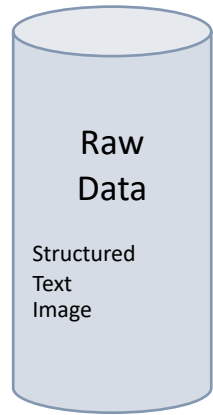


Human in the loop machine learning



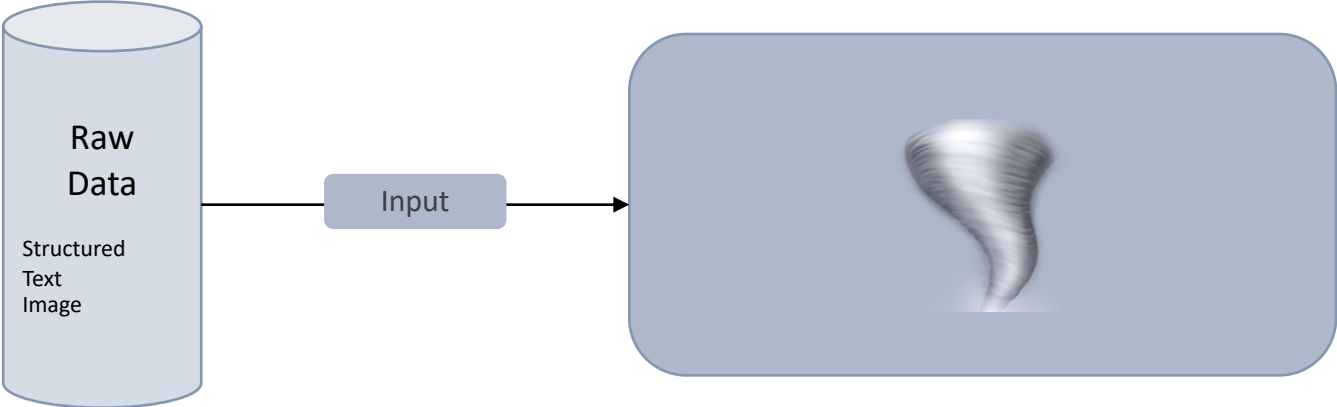
Tornado AI

Data flow



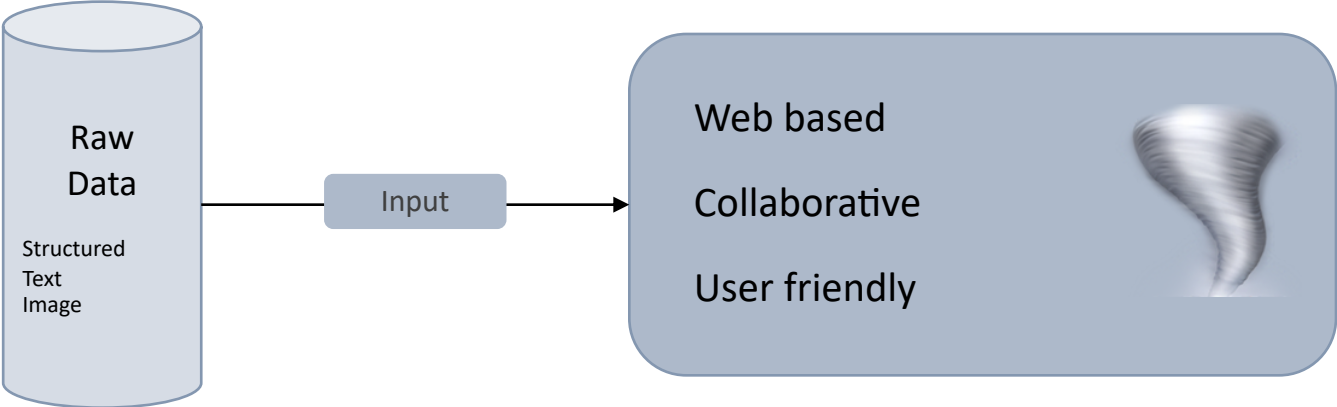
Tornado AI

Data flow



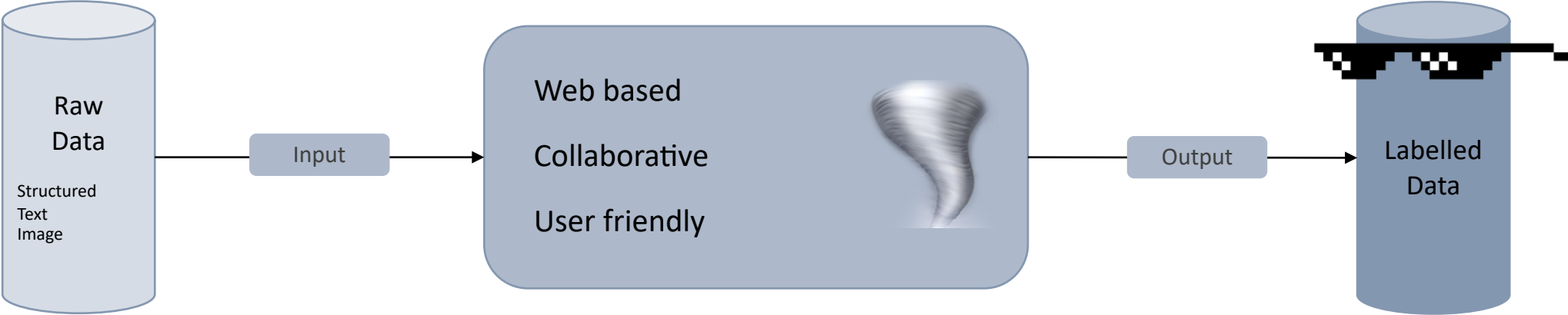
Tornado AI

Data flow



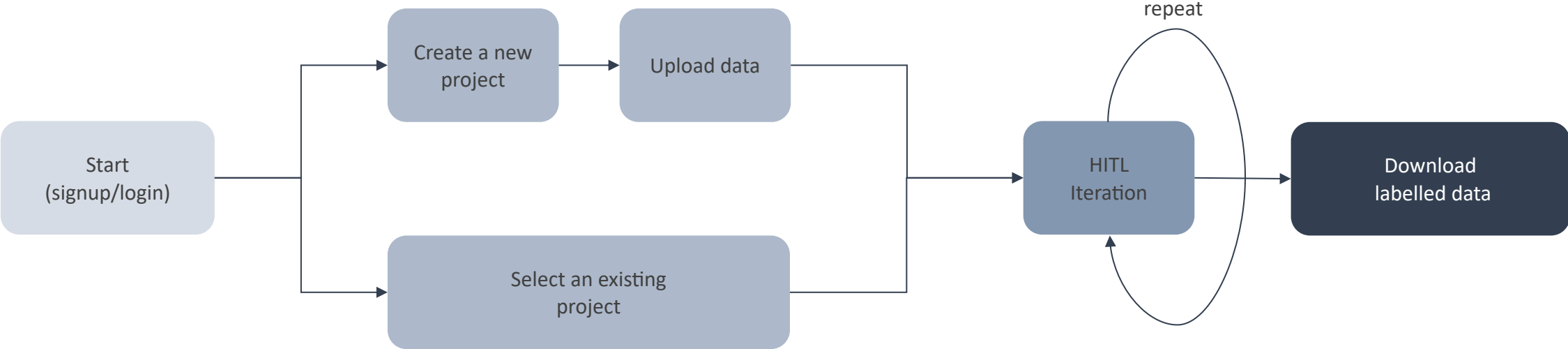
Tornado AI

Data flow

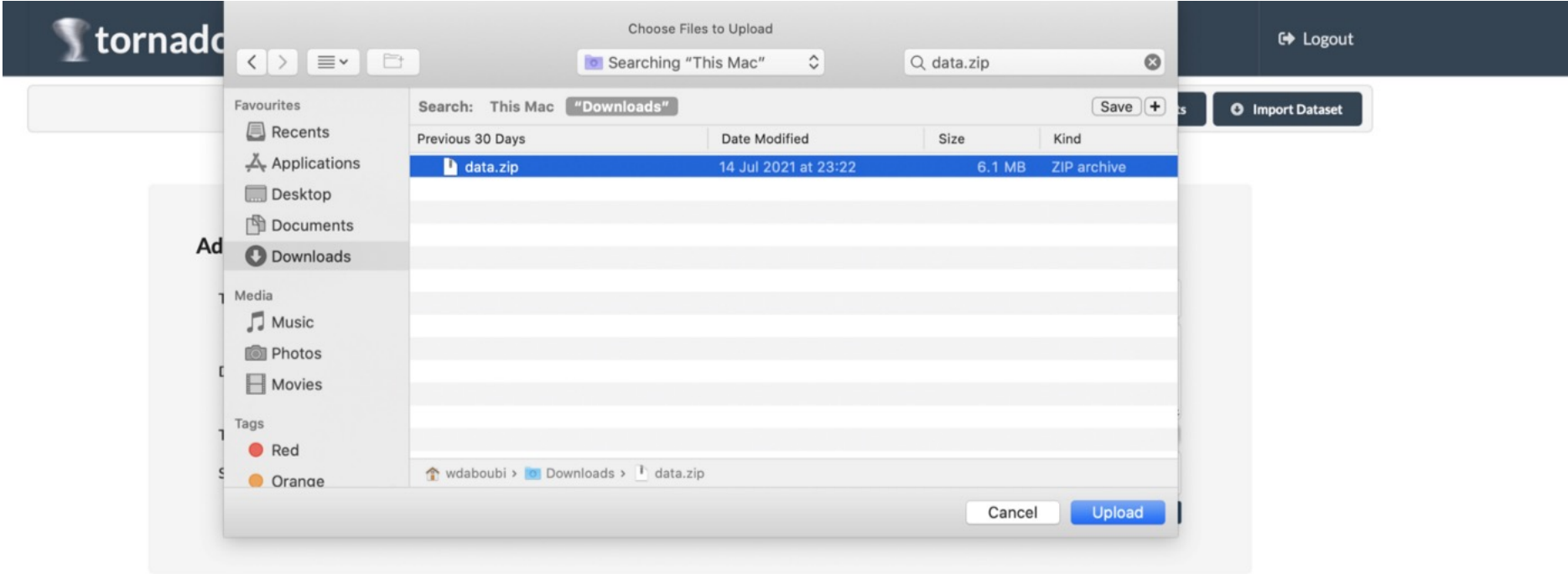


Tornado AI

Workflow



Tornado AI



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Tornado AI

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[My Datasets](#) [Import Dataset](#)

Add new Dataset

Title

Description

Type

Source

[Create](#)





Tornado AI

Data creation ✕
Your dataset is being processed

Dataset Iterations Download Label seed Check seed Auto Label Processing

Data Centric AI Competition

ID:
269fb4d19d40ae0f4d7a68ae55b37370
Type: image
Owner: walid.daboubi@gmail.com
Data Size:
Seed size:
Description:
Roman MNIST Data set labelling

#	Image	Auto Label	Human Label
aad9d834-ce5d-11eb-b317-38f9d35ea60f.png			
aa4c46da-ce5d-11eb-b317-38f9d35ea60f.png			



Tornado AI

The screenshot shows the Tornado AI web interface. At the top, there is a navigation bar with the Tornado AI logo and links for Home, My Projects, New Project, About, and Logout. Below the navigation bar is a secondary menu with icons for Dataset, Iterations, Download, Label seed, Check seed, Auto Label, and Processing. The main content area displays the details for a dataset named "Data Centric AI Competition".

Data Centric AI Competition

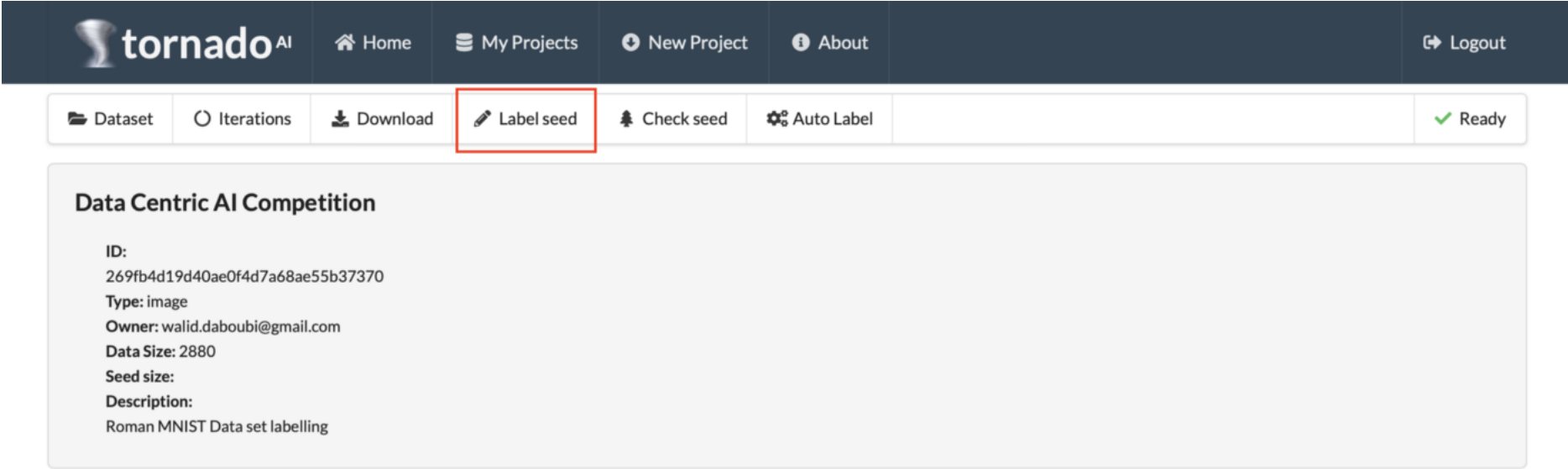
- ID: 269fb4d19d40ae0f4d7a68ae55b37370
- Type: image
- Owner: walid.daboubi@gmail.com
- Data Size: 2880
- Seed size:
- Description: Roman MNIST Data set labelling

Below the details is a table with columns for file ID, Auto Label, and Human Label. A success message "You dataset has successfully been saved" is displayed in a white box over the table. The table contains four rows of image files, with the second and fourth rows showing handwritten Roman numerals 'viii' and 'xv' respectively in the Human Label column.

#	Auto Label	Human Label
b303ea9a-ce5d-11eb-b317-38f9d35ea60f.png		
ae91d904-ce5d-11eb-b317-38f9d35ea60f.png		
ad3aa842-ce5d-11eb-b317-38f9d35ea60f.png		viii
ae4a4de6-ce5d-11eb-b317-38f9d35ea60f.png		xv



Tornado AI



The screenshot shows the Tornado AI web interface. At the top is a dark navigation bar with the Tornado AI logo and links for Home, My Projects, New Project, About, and Logout. Below this is a secondary navigation bar with buttons for Dataset, Iterations, Download, Label seed (highlighted with a red box), Check seed, Auto Label, and a Ready status indicator. The main content area displays details for a project titled 'Data Centric AI Competition'.

tornado^{AI} Home My Projects New Project About Logout

Dataset Iterations Download **Label seed** Check seed Auto Label Ready

Data Centric AI Competition

ID:
269fb4d19d40ae0f4d7a68ae55b37370

Type: image

Owner: walid.daboubi@gmail.com

Data Size: 2880

Seed size:

Description:
Roman MNIST Data set labelling



Tornado AI

tornado AI Home My Projects New Project About Logout

Dataset Iterations Download Label seed Check seed Auto Label Ready

Current model confidence

max=100.0%

min=50.08%

Select a threshold

The threshold has to be between the minimum current confidence 50.08 and the maximum current confidence 100.0

Threshold

64

Seed Size

50

Only not yet labelld

Label Seed




Tornado AI

tornado AI Home My Projects New Project About Logout

Dataset Download Check seed Update Labels My Datasets Import Dataset

Data Centric AI Competition

ID: 269fb4d19d40ae0f4d7a68ae55b37370
Type: image
Owner: walid.daboubi@gmail.com
Data Size: 2880
Seed size:
Description: Roman MNIST Data set labelling

#	image #	Auto Label	Human Label
1		0.0%	<input type="text" value="vi"/>



Tornado AI

The screenshot shows the Tornado AI web interface. At the top is a dark navigation bar with the Tornado AI logo and links for Home, My Projects, New Project, About, and Logout. Below this is a secondary toolbar with icons for Dataset, Iterations, Download, Label seed, Check seed, and Auto Label (highlighted with a red box), followed by a 'Ready' status indicator. The main content area displays project details for 'Data Centric AI Competition'.

Dataset	Iterations	Download	Label seed	Check seed	Auto Label	Ready
---------	------------	----------	------------	------------	-------------------	-------

Data Centric AI Competition

ID:
269fb4d19d40ae0f4d7a68ae55b37370

Type: image

Owner: walid.daboubi@gmail.com

Data Size: 2880

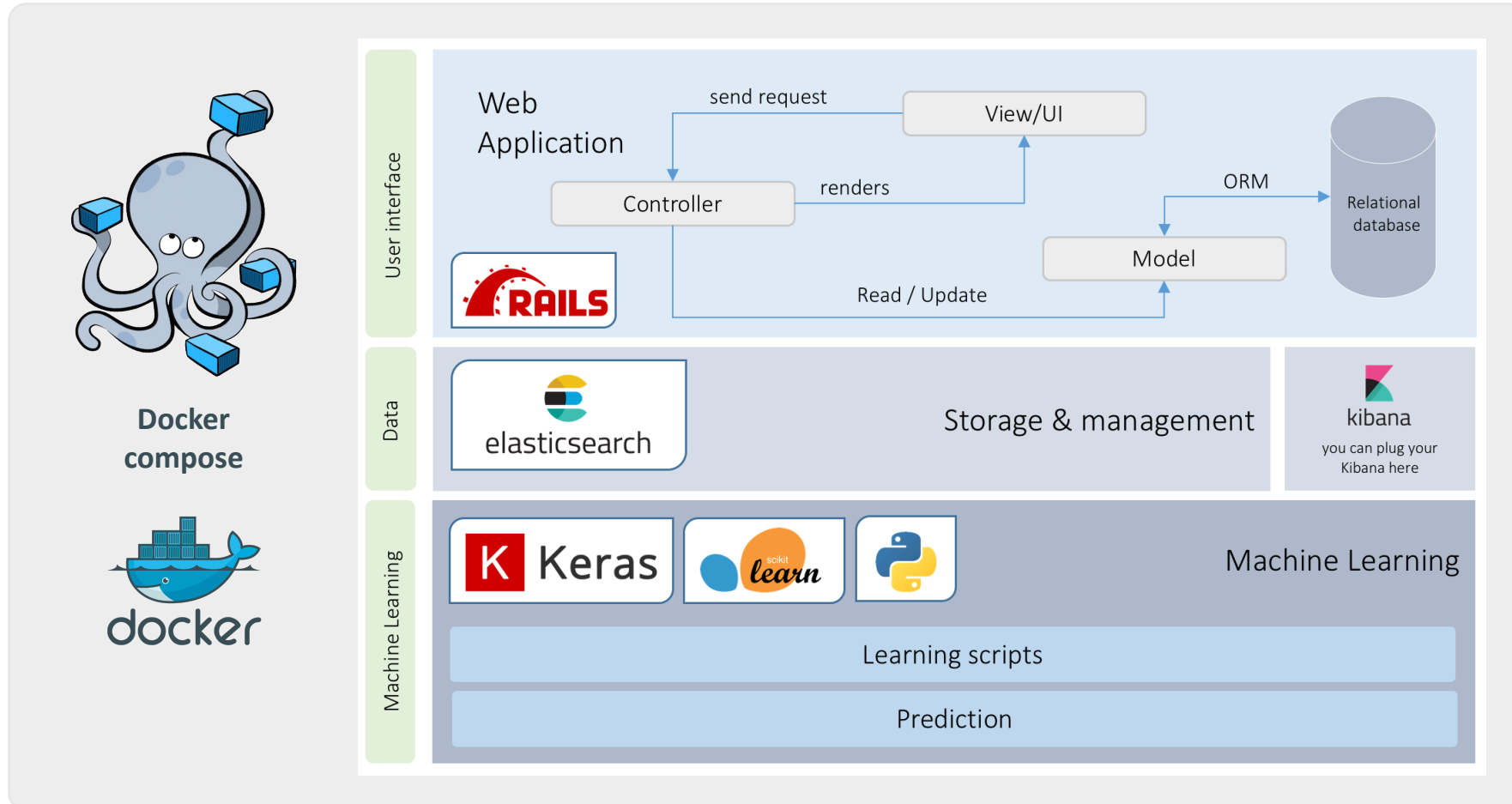
Seed size:

Description:
Roman MNIST Data set labelling



Tornado AI

Architecture



Manufacturing use case



RAVIRAJSINH DABHI · UPDATED 2 YEARS AGO



206

New Notebook

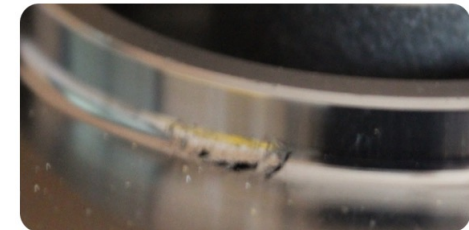


Download (105 MB)




casting product image data for quality inspection

industrial data, casting manufacturing product, quality inspection, automation



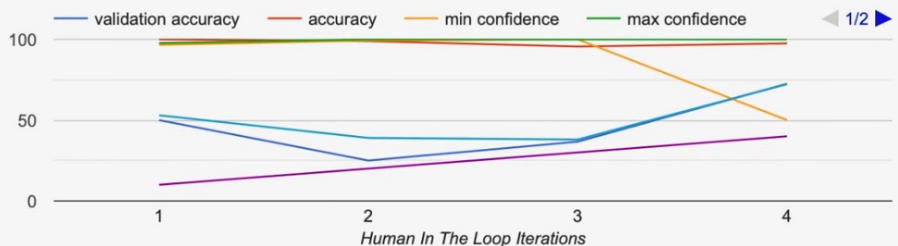
Demo

[Home](#) [My Projects](#) [New Project](#) [About](#) [Logout](#)





[Dataset](#) [Iterations](#) [Download](#) [Label seed](#) [Check seed](#) [Auto Label](#) Ready

Metal casting

ID: d6c5cb97537f1bd56773afa28d8cb0f6
Type: image
Owner: demo@tornado.com
Data Size: 1300
Seed size: 400
Description: Metal casting data labelling



Iteration	validation accuracy	accuracy	min confidence	max confidence
1	50	100	100	100
2	25	100	100	100
3	35	100	100	100
4	75	100	50	100

#	auto_label	image_file	Confidence	Human label
1	ok	 cast_ok_0_601.jpeg	100.0% 	ok
2	ok	 cast_ok_0_5565.jpeg	100.0% 	ok



Use Tornado AI



 [human-in-the-loop-machine-learning-tool-tornado](#) 

Public

Tornado is a human-in-the-loop machine learning framework that helps you exploit your unlabelled data to train models through a simple and easy to use web interface.

 Ruby  27  9



Use Tornado AI

Usage

Build Tornado Docker image

```
$ docker-compose build
```

Launch Tornado image

```
$ docker-compose up
```

Tornado will then be available at <http://localhost:3000>

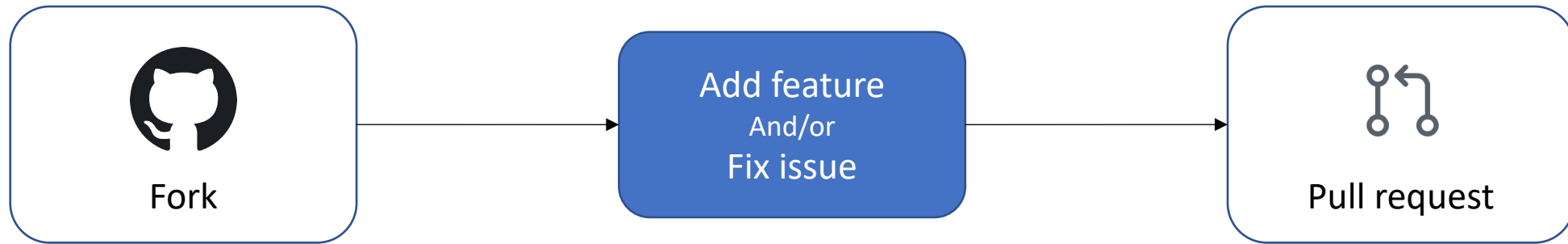
Details and how to use

All information are available at:

<https://www.linkedin.com/pulse/tornado-zero-coding-active-learning-ml-tool-walid-daboubi/>



Contribute to Tornado AI



Thank you!

Tornado^{AI}

