

# Lab 15

# Tensorflow.js

Software Studio

DataLab, CS, NTHU

2022 spring

# Outline

- Introduction
  - Pretrained Tensorflow.js models
- Train your own model using universal sentence encoder.

Tensorflow.js - [Link](#)

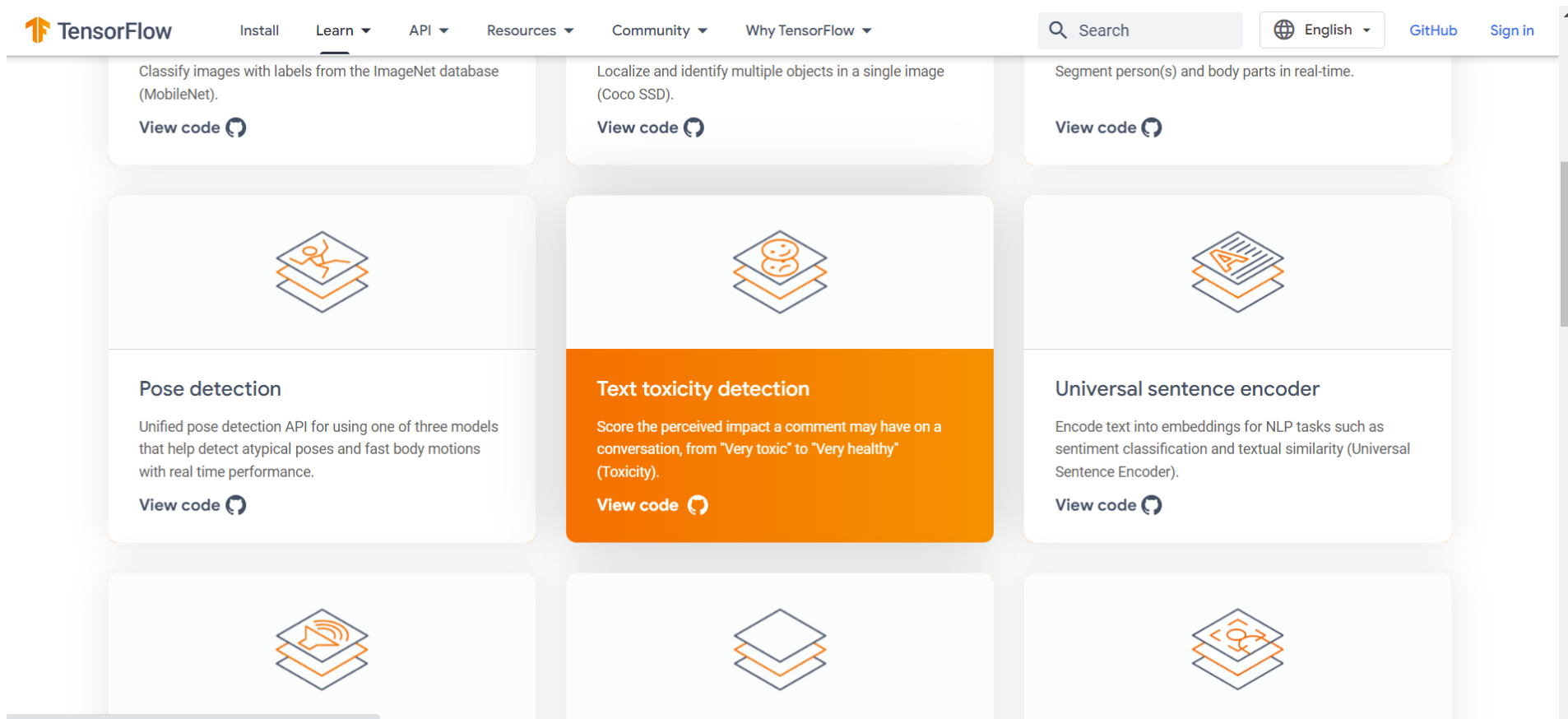
- Stand upon the shoulders of Google.
- Develop ML models in JavaScript, and use ML directly in the browser or in Node.js.



**TensorFlow.js**

# Tensorflow.js - [Link](#)




- [Pretrained Tensorflow.js models.](#)





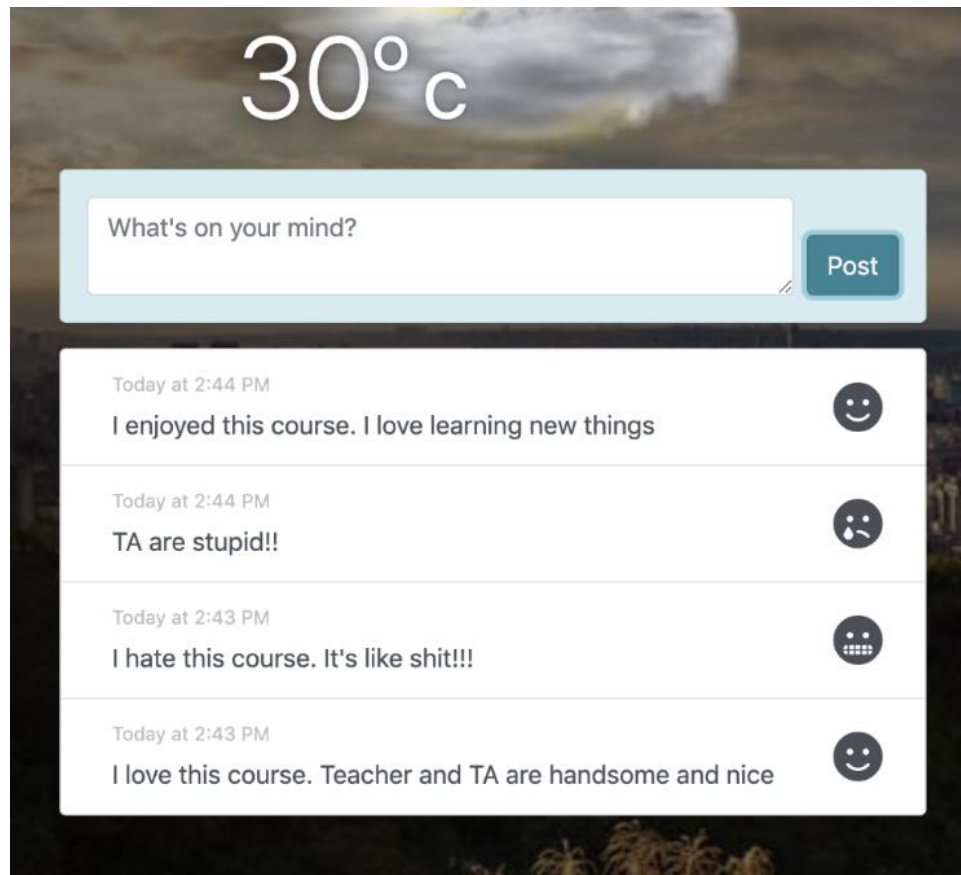
# Tensorflow.js – Text Toxicity Detection

- What can we do after getting the output?

Sentence	Identity attack	insult	obscene	Severe toxicity	sexual explicit	Threat	toxicity	Emoji
Teacher and Ta are handsome and nice. I love you!!	False	False	False	False	False	False	False	 Happy
Ta is stupid. He can not do anything. Ta is Idiot	<b>True</b>	<b>True</b>	False	<b>True</b>	False	<b>True</b>	<b>True</b>	 Sad
I never fucking having a course like this. FUCKING ASSHOLES! PISSING ME OFF	False	False	<b>True</b>	False	<b>True</b>	False	False	 Fear

# Tensorflow.js – Text Toxicity Detection

- What can we do after getting the output?



# Tensorflow.js – Text Toxicity Detection

- Try to use the [@tensorflow-models/toxicity](https://www.tensorflow.org/js/models/toxicity) in your graphql server.
- Install package:

```
$ yarn add @tensorflow/tfjs @tensorflow-models/toxicity
```



# Tensorflow.js – Text Toxicity Detection

- Usage:

```
import '@tensorflow/tfjs'
import * as toxicity from '@tensorflow-models/toxicity'

const threshold = 0.9;
```

```
async getPrediction ({ sentence }) {
  const sentences = [sentence];
  const model = await toxicity.load(threshold)
  const response = await model.classify(sentences).then(predictions => {
    console.log(predictions);
    return predictions
  })
  return response
}
```

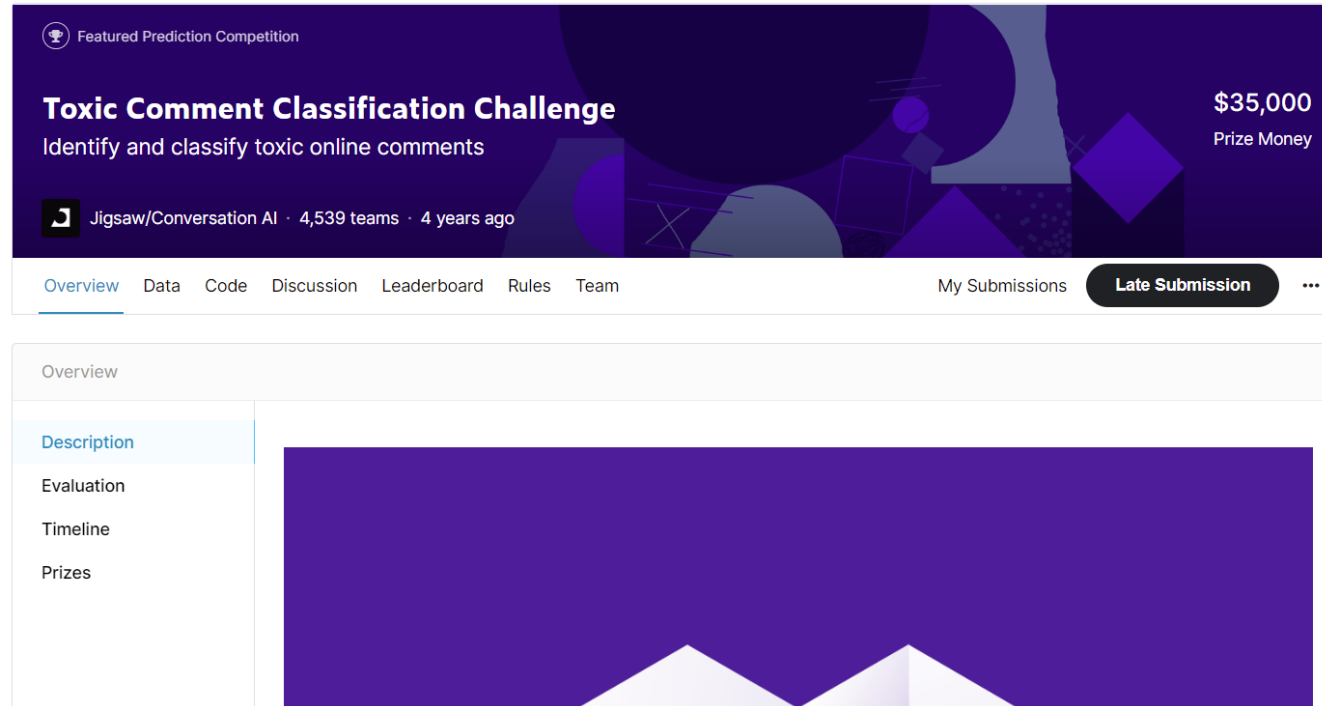
# Train your own model

- Kaggle is an online community platform for data scientists and machine learning enthusiasts.

The word "kaggle" is written in a lowercase, blue, sans-serif font. The letters are evenly spaced and the font is clean and modern.

# Train your own model

- We will use [the below dataset](#). Please participate in the competition.



The screenshot displays the 'Toxic Comment Classification Challenge' page on Kaggle. The header features a purple background with abstract geometric shapes. The main title 'Toxic Comment Classification Challenge' is prominently displayed, followed by the subtitle 'Identify and classify toxic online comments'. To the right, the prize money '\$35,000' is shown. Below the title, the competition is attributed to 'Jigsaw/Conversation AI' and notes '4,539 teams' and '4 years ago'. A navigation bar includes links for 'Overview', 'Data', 'Code', 'Discussion', 'Leaderboard', 'Rules', and 'Team'. On the right side of the navigation bar, there are links for 'My Submissions' and a 'Late Submission' button. The 'Overview' section is currently selected, showing a sidebar with links for 'Description', 'Evaluation', 'Timeline', and 'Prizes'. The main content area is mostly obscured by a large purple rectangle.

Featured Prediction Competition

## Toxic Comment Classification Challenge

Identify and classify toxic online comments

Jigsaw/Conversation AI · 4,539 teams · 4 years ago

\$35,000  
Prize Money

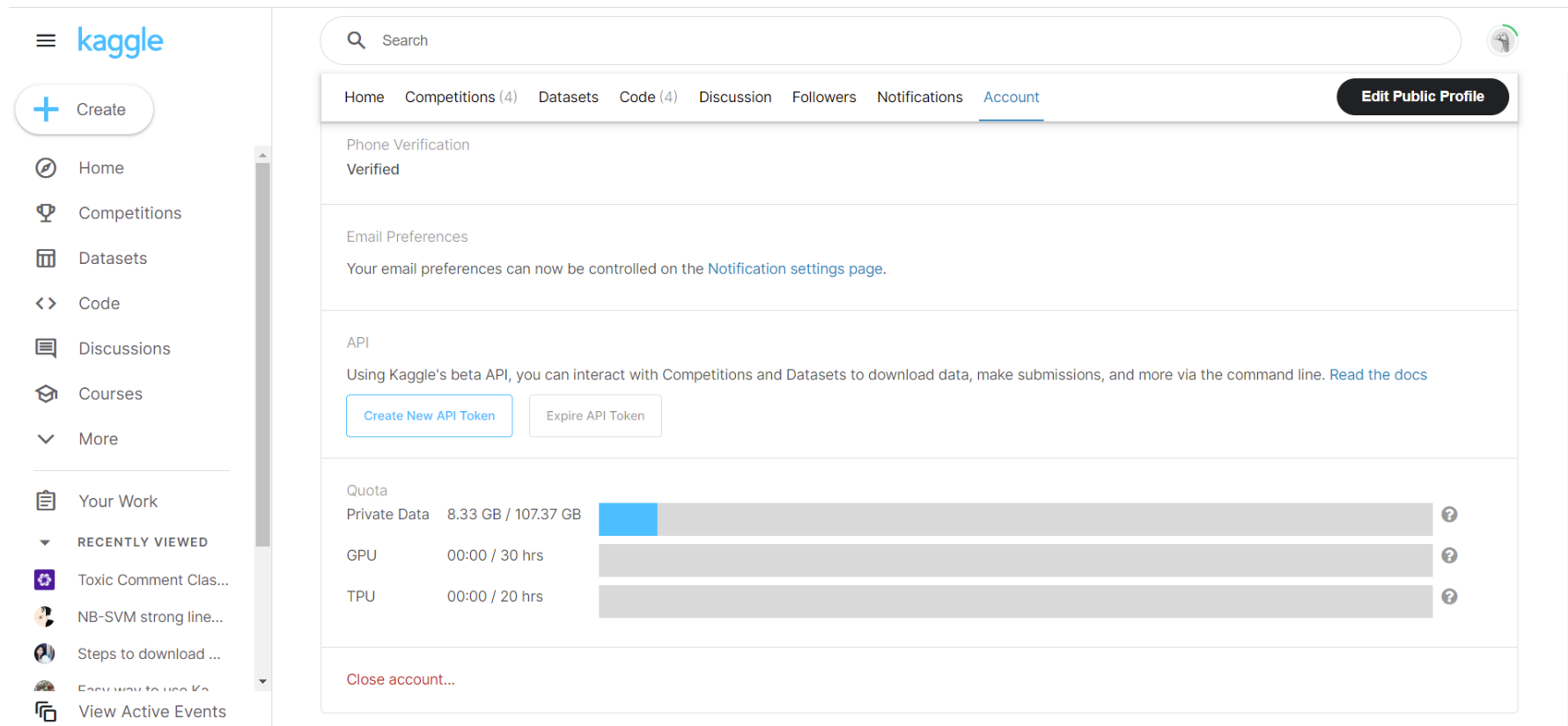
Overview Data Code Discussion Leaderboard Rules Team My Submissions **Late Submission** ...

Overview

Description  
Evaluation  
Timeline  
Prizes

# Train your own model

- Create a Kaggle account and create new API token.



The screenshot shows the Kaggle website's 'Account' page. The left sidebar contains navigation links: Home, Competitions, Datasets, Code, Discussions, Courses, and More. Below these are 'Your Work' and 'RECENTLY VIEWED' items. The main content area has a search bar and a navigation bar with links to Home, Competitions (4), Datasets, Code (4), Discussion, Followers, Notifications, and Account (selected). A 'Phone Verification' status is shown as 'Verified'. The 'Email Preferences' section states that email preferences can be controlled on the 'Notification settings page'. The 'API' section provides information about using Kaggle's beta API and includes a 'Create New API Token' button and an 'Expire API Token' button. Below this, a 'Quota' section displays usage for Private Data (8.33 GB / 107.37 GB), GPU (00:00 / 30 hrs), and TPU (00:00 / 20 hrs), each with a progress bar and a help icon. At the bottom, there is a 'Close account...' link.

Home Competitions (4) Datasets Code (4) Discussion Followers Notifications **Account** [Edit Public Profile](#)

Phone Verification  
Verified

Email Preferences  
Your email preferences can now be controlled on the [Notification settings page](#).

API  
Using Kaggle's beta API, you can interact with Competitions and Datasets to download data, make submissions, and more via the command line. [Read the docs](#)

[Create New API Token](#) [Expire API Token](#)

Quota

Private Data	8.33 GB / 107.37 GB	<div></div>	?
GPU	00:00 / 30 hrs	<div></div>	?
TPU	00:00 / 20 hrs	<div></div>	?

[Close account...](#)

# Train your own model

- Start to train code on Google Colab.

