Machine Learning
Brain.js

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.


MACHINE
LEARNING

Brain.js

GPU accelerated Neural networks in JavaScript

for Browsers and Node.js

Brain.js is a GPU accelerated library of Neural Networks written in JavaScript for Browsers and Node.js. It is simple, fast and easy to use.

Simple

JS index.js > ...

```
1   const brain = require("brain.js");
2   const network = new brain.NeuralNetwork();
3
4   network.train([
5     { input: [0, 0, 0], output: [0] },
6     { input: [0, 1, 0], output: [0] },
7     { input: [0, 1, 1], output: [0] },
8     { input: [1, 1, 0], output: [1] },
9     { input: [1, 0, 0], output: [1] },
10  ]);
11
12  const output = network.run([1, 0, 0]);
13  console.log(`prob : ${output}`);
14
```

DEBUG CONSOLE PROBLEMS 3 OUTPUT TERMINAL

```
Robins-MacBook-Pro:thundertalk-brain robin$ node index.js
prob : 0.9258108139038086
Robins-MacBook-Pro:thundertalk-brain robin$
```

A little bit HARDER

JS index.js > ...

```
const brain = require("brain.js");
const network = new brain.NeuralNetwork();

const country = [
  [0, "Germany"],
  [1, "Argentina"],
  [2, "Spain"],
  [3, "Netherlands"],
  [4, "Italy"],
  [5, "France"],
  [6, "Brazil"],
  [7, "England"],
  [8, "Ceko"],
  [9, "Sweden"],
  [10, "Uruguay"],
  [11, "Hungary"],
  [12, "Croatia"],
];
```

```
network.train([
  { input: [0, 1], output: [0] },
  { input: [2, 3], output: [0] },
  { input: [4, 5], output: [0] },
  { input: [6, 0], output: [0] },
  { input: [6, 5], output: [1] },
  { input: [6, 4], output: [0] },
  { input: [1, 0], output: [1] },
  { input: [1, 0], output: [0] },
  { input: [0, 4], output: [1] },
  { input: [3, 1], output: [1] },
  { input: [3, 0], output: [1] },
  { input: [4, 6], output: [1] },
  { input: [7, 0], output: [0] },
  { input: [6, 8], output: [0] },
  { input: [6, 9], output: [0] },
  { input: [11, 0], output: [1] },
  { input: [10, 6], output: [1] },
  { input: [11, 4], output: [1] },
  { input: [8, 4], output: [1] },
  { input: [10, 1], output: [0] },
]);

const output = network.run([12, 5]);
let winner = "";
if (output > 0.5) {
  winner = "France";
} else {
  winner = "Croatia";
}
console.log(`Final winner probability : ${winner}`);
```

DEBUG CONSOLE PROBLEMS 2 OUTPUT TERMINAL

```
Robins-MacBook-Pro:thundertalk-brain robin$ node index.js
Final winner probability : France
Robins-MacBook-Pro:thundertalk-brain robin$
```

Complex
(Unwanted RESULT)

index2.js > iterations

```
1   const brain = require("brain.js");
2   // const data = require("./data.json");
3   const data = require("./data2.json");
4
5   const network = new brain.recurrent.LSTM();
6
7   const trainingData = data.map((el) => ({
8     input: el.match,
9     output: el.winner,
10  }));
11
12  network.train(trainingData, {
13    iterations: 300,
14  });
15
16  const output = network.run("France Vs Croatia");
17  console.log("Biggest winner probability: " + output);
18
```

DEBUG CONSOLE PROBLEMS 2 OUTPUT TERMINAL

```
Robins-MacBook-Pro:thundertalk-brain robin$ node index2.js
Biggest winner probability: Argentina
Robins-MacBook-Pro:thundertalk-brain robin$
```

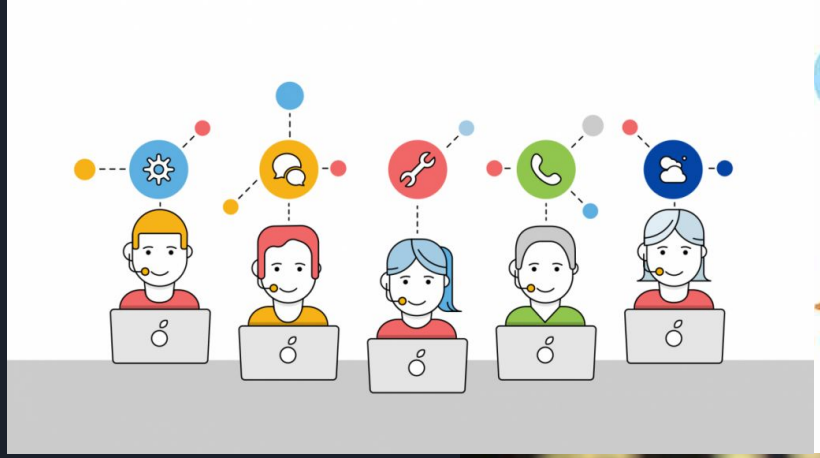
{} data.json > {} 13

```
29    },
30    {
31      "match": "Colombia Vs England",
32      "winner": "England"
33    },
34    {
35      "match": "Uruguay Vs France",
36      "winner": "France"
37    },
38    {
39      "match": "Brazil Vs Belgium",
40      "winner": "Belgium"
41    },
42    {
43      "match": "Russia Vs Croatia",
44      "winner": "Croatia"
45    },
46    {
47      "match": "Sweden Vs England",
48      "winner": "England"
49    },
50    {
51      "match": "France Vs Belgium",
52      "winner": "France"
53    },
54    {
55      "match": "Croatia Vs England",
56      "winner": "Croatia"
57    }
58  ]
59
```

{} data2.json > {} 19 > match

```
1   [
2     {
3       "match": "Germany Vs Argentina",
4       "winner": "Germany"
5     },
6     {
7       "match": "Spain Vs Netherlands",
8       "winner": "Spain"
9     },
10    {
11      "match": "Italy Vs France",
12      "winner": "Italy"
13    },
14    {
15      "match": "Brazil Vs Germany",
16      "winner": "Brazil"
17    },
18    {
19      "match": "France Vs Brazil",
20      "winner": "France"
21    },
22    {
23      "match": "Brazil Vs Italy",
24      "winner": "Brazil"
25    },
26    {
27      "match": "Germany Vs Argentina",
28      "winner": "Germany"
29    },
30    {
31      "match": "Argentina Vs Germany",
32      "winner": "Argentina"
```

Implementation



E-commerce Trends

Future of Machine Learning


Destroy
HUMANS

876プロダクション所属

Ai Hidaka

日高　愛

CV：戸松 遥

神様からの試練でも
笑顔と元気で吹き飛ばす
この夢だけは　あきらめない!

年齢：13歳
身長：149cm
体重：40kg
誕生日：6月25日
血液型：O型
スリーサイズ：78-55-79
趣味：バーゲンの1点買い、金魚すくい

Contributor:

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- Nino
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References:

- https://www.youtube.com/watch?v=RVMHhtTqUxc
- https://brain.js.org/
- https://github.com/BrainJS
- https://en.wikipedia.org/wiki/Machine_learning