



What's your calling ?

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TEAM BRUH-GRAMMERS,
Contact : Jayasuriya R.S.,
7418261291,
Thiagarajar college of Engineering.

Problem

A student, fascinated by neural networks getting stuck in a class about fluid mechanics or an automobile enthusiast who happens to love brakes and gears, getting trapped in a kernel programming class is a very common sight in Indian engineering colleges. Wrong engineering branch choices !

Engineering aspirants straight out of high school are given the liberty of taking decisions to what might be the stepping stone for their professional careers.

They go onto decide their streams upon the ‘advices’ that are usually spread through word of mouth or through several consulting agencies. Most consulting agencies have the ‘CTC ’ offered as their only metric and they fail to state what’s actually inside each branch. The students end up not finding what their true calling actually is.

‘2.9 M students enroll into engineering colleges every year’ – HRD Ministry, India.

‘India produces 25% of the world’s engineering graduates.’ - Trak.in.

‘Only 7% of Indian Engineers are employable’. - IndiaToday. (Based on a survey by Aspiring minds).

Students getting into right departments based on their interests could certainly have a positive impact upon improving the quality of engineers graduating out of Indian colleges. The wastage of resources like student’s time, staff’s time (not having to guide students without interest on a particular subject.), money spent on offering lab facilities (to students with no interest) etc., could also be minimised.

Solution

The solution here is to suggest which branch of engineering the user is most likely to find interesting. The web application, ‘*What’s your calling?*’ will serve to find this out by analysing the range of articles that kindle the curiosity among each student.



“Curiosity is the wick in the candle of learning”

The user has to sign up, read articles by clicking on them and leave the tough work like decision making to the algorithm. He can also react to the post with two buttons, “Cool !” and “Meh -_-”.

The posts that appear in the feed are from various educational sites and blogs and are aimed at engaging the students. Each post has certain ‘weights’ associated with it. These weights indicate their association with each branch and are assigned by a natural language processing algorithm.

Based on the user’s reactions and the type of posts his curiosity takes him, the feed learns his interests and recommends posts accordingly.

Once the system has enough data about the user, it starts to predict which branches of engineering he/she could possibly take. The more the user spends time on the application, the more accurate the results are.

Tech-stack

HTML,

CSS,

Javascript,

Node Js,

Jade,

Express,

Socket IO,

MySql,

Python,

Scikit learn and other associated python frameworks.

Algorithms and Models :

I. Algorithm for content clustering:

The posts are scraped off of the web and then are subjected to *fuzzy c- means clustering* to assign 'weights' on them depending upon how much they relate to each branch.

The training data for this model is obtained from the most popular books and articles in each branch. The data is cleansed properly before using them for training.

II. Algorithm for the feed:

The feed is a recommender system based upon a *content based filtering* algorithm. Parameters such as, the posts the users react to and the posts that they click on are taken into account. The feed also takes steps to minimise false positives.