

# METHODOLOGY

It's crazy how we all sit in our rooms and talk of an idea and then one hour after discussing it we start preparing for our semester midterm exams and throw that idea into the dustbin. Similarly, yesterday sitting in our room we thought of predicting room allotment for students using Prediction Algorithm, machine learning and data mining, as we were about to again throw this idea into a dustbin, something inside of us told to at least try this. At 11 am on 17 march we started working on it. We started to connect the dots, we already had experience in Prediction Algorithm, machine learning and data mining. Somehow we had this idea that these subjects knowledge will help us achieve our goal. Now coming to the actual procedure:

## Data Mining

- First, we collected this year's data and segregated them into types of beds and calculated a total number of rooms.
- Then we scrapped previous year data for each group and from various online sources (FB, WhatsApp) and again segregated them.
- Next, we collected the in between counselling data of previous year to account the human factor.

## Maths

- We categorised all the beds into 1A, 1NA, 2A, 2NA, ..... 6NA
- we further categorised each type of bed w.r.t their blocks availability.
- Next, we calculated the percentile(%) of each block with respect to type of bed. (P2)
- Then we calculated the percentile% for each type of bed with respect to the rooms available.
- Next, we mined and calculated the quality factor(Q1) of blocks w.r.t their beds.
- Now we calculated Q2 for blocks w.r.t beds and room availability in them at certain stages.
- Now to store all our calculations we used map data structure in C++.
- We used a bidirectional neural network to converge our algorithm output to the expected output and since it converges the data on the basis of a number of iteration we gave one at a time so we stopped the iteration once it reached our expected output time for our candidate generation to test this against our data.
- Now Prediction Algorithm most suited our needs and we applied it on P1 and Q1 and stored it in Z1
- Again we applied it for P2, Q2 and stored it in Z2
- We stored the students NCGPA rank in X
- And we applied our function  $\Phi(P1, Q1, P2, Q2, X)$ .

We failed many times but as someone said: "If at first, you don't succeed; call it version 1.0" so we kept on trying and according to our outputs, we kept on improving our Prediction Algorithm and Result Generation Function to converge the result.  
After a lot of hard work and  
So always try to connect your dots and keep on increasing your learning curve

You might think that this was crazy, unachievable target in this sort of time, we too thought of failure, dillydallying, not solving it in time but the idea of Relieving anxiety, simplifying 3000 students life with it kept us going forward; and we did it in just one day which is kind of amazing now that we think of it but not surprised since you know after all we are engineers.

We cannot completely divulge information like how we calculated the quality factor, Prediction Algorithm or our Result Generation Function since we are thinking of publishing our methodology as a research paper. But we just wanted to tell you guys that our prediction model is not another if else case but a genuine authentic set of formula and algorithm. We just wanted to inspire our users to try to stay with your idea, Dog it and work at it until it's done right. So hope you guys like it and at last, we just want to say Always

"Stay Hungry, Stay Foolish"

## **Regards**

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