**Junyi’s Playbook on Front End**

By Junyi Zhao for his EECS 581 Team 25

First creation Nov 20, 2022 by Junyi Zhao

When working on an educational software, it is very important to provide the right introduction and to draw attention from the students, letting them know the fact that it will be useful and rewarding to learn something. Therefore, as developers of the educational software, our team members feel urged to provide an interactional and special-to-general, easy-to-hard playbook for our front end of the software, following on the modularized back end to provide a connected learning experience.

After meetings and announcements, our front end should look like in these steps, even this is still a developing story.

1. Starting from data points to patterns – intro to regression
2. The easiest regression: linear regression
3. Different ways of mathematical regressions: logistical regression and softmax
4. Deciding by steps: intro to decision tree
5. Most fit = best? Underfitting and overfitting
6. Transition to complicated mathematical models
7. From human readable data to machine readable data – tokenizing
8. Tokenizing selections – one hot and integer
9. Tokenizing images
10. Tokenizing words
11. Neural network

What should we do in each step:

Intro to regression:

Use examples to tell students why prediction is important, generally

Tell students how prediction is improved historically

What to consider in

How computer helped making predictions more accurate and faster

Linear regression:

The first take from a bunch of datapoints to a line

Intro to “finding out a new possible point”

Minimize error (sum of square method)

First take of outlier concept