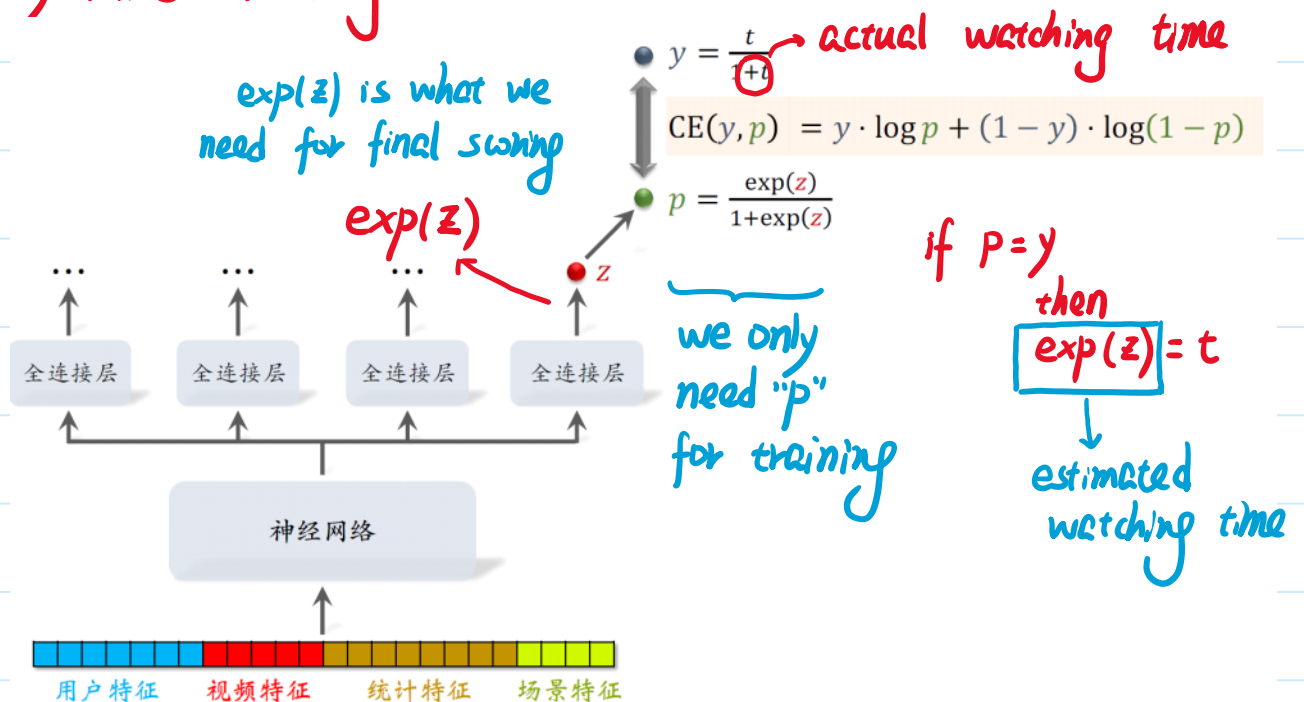


Video Playing Model

Saturday, March 30, 2024 10:27 AM

Video : ① play time ② Complete rate
③ other interaction: like, collect

Play Time Modeling



(picture from Shusen Wang on Youtube/Bilibili)

Complete Rate Modeling:

Regression:

① video length is 10 minutes ; actual watch 4 minutes
complete rate is $4/10 = 0.4$

② let estimated complete rate be close to actual:

$$L = y \cdot \log P + (1-y) \cdot \log(1-P)$$

③ if model predicts $P = 0.7$. it means the video is likely to play 70% of its length time.

Binary Classification:

① define threshold:

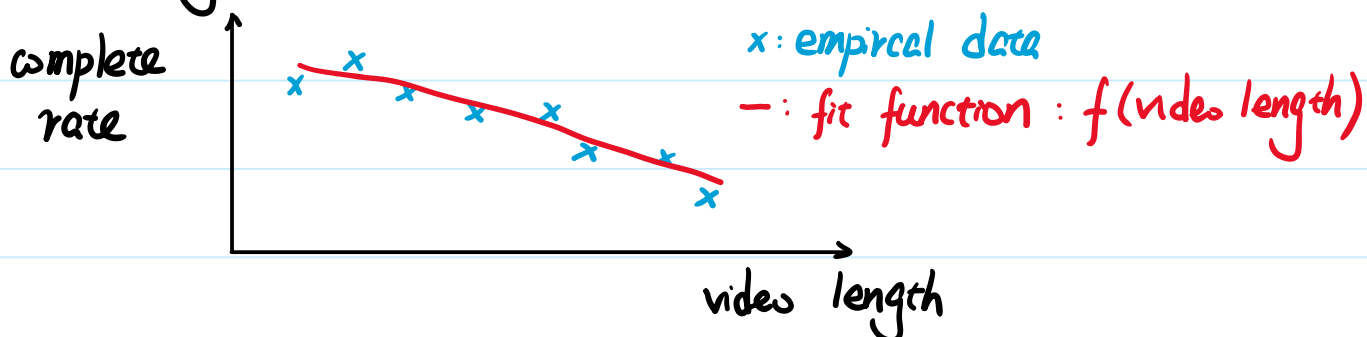
if a video is played for more than $X\%$ of its length time. it is positive sample. Otherwise, negative.

② classify video $\geq X\%$ vs. video $\leq X\%$

③ if model predicts 0.7. it means the video has 70% chance to be played more than $X\%$ time.

Issues of "Complete Rate"

longer video has smaller complete rate



Model \rightarrow estimated complete rate

$$P_{\text{finish}} = \frac{\text{estimated complete rate}}{f(\text{video length})}$$

combined with other metric for ranking