Equal Affection or Random Selection: the Quality of Subjective Feedback from a Group Perspective

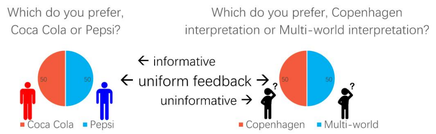
Jiale Chen, Yuqing Kong, **Yuxuan Lu**

The Center on Frontiers of Computing Studies, Computer Science Dept., Peking University

{jiale_chen, yuqing.kong, yx_lu}@pku.edu.cn

Theory

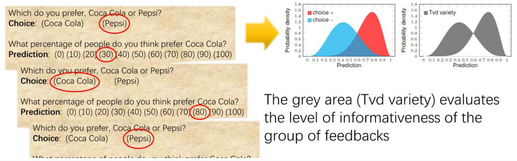
Motivation



- **Key question**: How informative the collected feedback is?
- **Main challenge**: The current feedback is not sufficient to answer the question

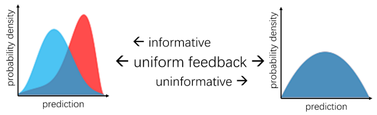
Our approach

- Choice-Prediction framework



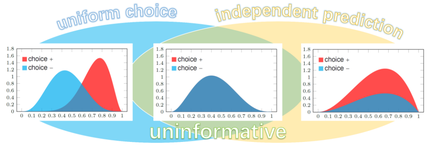
The grey area (Tvd variety) evaluates the level of informativeness of the group of feedbacks

Key assumption



- Assumption: For informative people, they have different distributions over prediction

New definition: uninformativeness

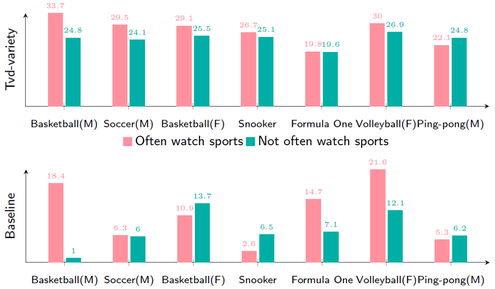


New metric: f-variety*

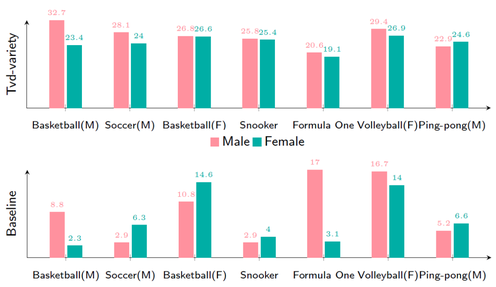
- **This paper**: A metric to evaluate the degree of informativeness
  - Separate informative and uninformative feedback
  - Decrease as the ratio of uninformative feedback increases.

*: Tvd-variety is a special case of f-variety, which is

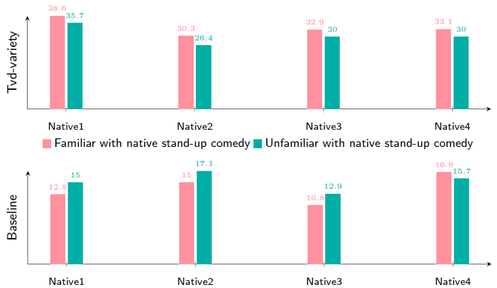
Real-world case studies



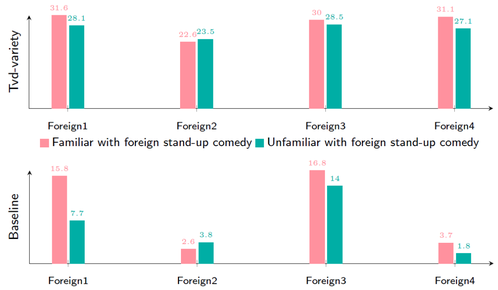
Often	Not often
215	441



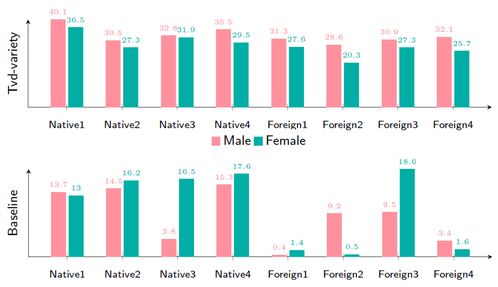
Male	Female
306	350



Familiar	Unfamiliar
492	140



Familiar	Unfamiliar
190	442



Male	Female
262	370

**: The baseline metric measures the degree of unbalance of the statistics. In the binary case, the baseline metric is $|q_+ - 0.5|$.

The index of the arXiv version of this paper: **2102.12247**