Social online video has emerged as one of the most popular applications, where bullet screen comments are one of the favorite features of Asian users. User behavior report finds that most people are used to quickly navigate and locate the video clip according to its corresponding video labels. Traditional scene segmentation algorithms are mostly based on the analysis of frames, which cannot automatically generate labels. Since time-synchronized comments can reflect the episode of the current moment, this paper proposes an unsupervised video episode boundary detection model (VEBD) for bullet screen comment videos. It can not only automatically identify each episode boundary but also detect the topic for video tagging. Experiments based on real data show that our model outperforms the existing algorithms in both boundary detection and semantic tagging quality.

**Technological innovation**

- Compared with the traditional topic model, this article innovatively adds time prior and importance prior.
- It can not only automatically identify each episode boundary, but also detect the topic for video tagging.

**A demo of VEBD model**

- When the video is playing, the comments are swiped across the screen like bullets, so they are also known as bullet screen comments.
- By processing these bullet screen comments filled with screens, VEBD model can divide a complete video into segments based on the correct episodes.

**The framework of VEBD model**

- VEBD model consists of three layers: corpus preprocessing, Gibbs sampling, and episode label merging.

**The labels generated by the VEBD model on timeline**

- VEBD model generates labels on the timeline.