Delay Removal on Television Interviews

CSE495
Preliminary Presentation

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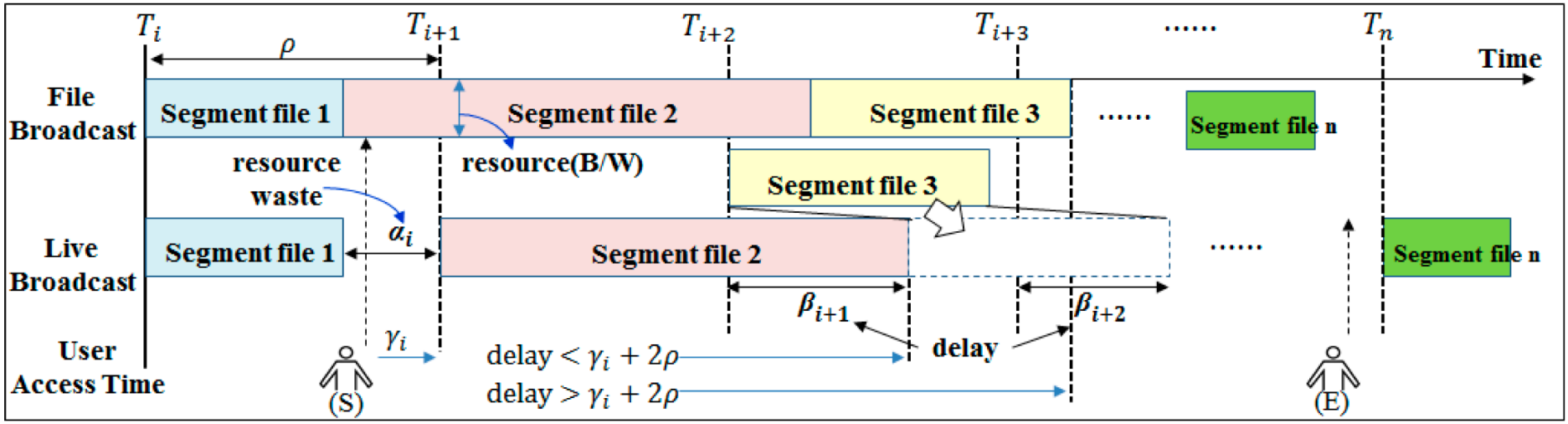
Project Scheme and Description

Delays can occur in TV interviews. When studio presenter questions a remote interviewee, they cannot hear each other in real time. Therefore, the remote interviewee smiles while waiting to hear a question that the audience has already heard, because interviewee cannot hear that question right away.

The aim of this project is to remove these delays. The audience should watch the video as if there were no delays and should not be aware of the delays.

Project Design Plan



- Delay detection will be done throughout the video.
- The video will be shifted by the delay time on each delay detection.

Timeline

Weeks	17 October	24 October	31 October	7 November	14 November	21 November	28 November	5 December	12 December	19 December	26 December	2 January	9 January	16 January
Preparing the development environment, learning the necessary libraries, literature review														
Collecting datasets														
Data preprocessing														
Algorithm implementation														
Test														
Preparing the report														

Project Requirements - 1

What the project should accomplish in order:

- The videos of the studio presenter and the remote interviewee will be taken as input.
- The two videos will be compared by looking at the audio and video
- Delay detection will be performed on videos progressing in parallel
- When delay is detected, the video delayed (video of the remote interviewee) will be shifted by the delay time (for each delay during the tv interview)
- Shift/delay time will be output (like the delay time is 2 seconds)

Project Requirements - 2

- Python
- OpenCV
- A dataset containing 100 videos will be created
  These videos (with delay) will contain conversations, such as television interviews.

Success Criteria

- TV interviews with no delay (85% accuracy rate)
- 1 minute video will be handled in 1 minute.
- At least 100 videos will be used as data

Resources

1. Seo, Hyungyoon. Kim, Goo. “DASH Live Broadcast Traffic Model: A Time-Bound Delay Model for IP-Based Digital Terrestrial Broadcasting Systems” Applied Sciences 2021, 11(1), 247, https://doi.org/10.3390/app11010247
2. https://www.linkedin.com/pulse/how-do-news-interviews-during-lockdown-ten-top-tips-virtual-hamilton/
3. Zhang, C. Liu, J. “On Crowdsourced Interactive Live Streaming: A Twitch. TV-Based Measurement Study” in NOSSDAV ’15: Proceedings of the 25th ACM Workshop on Network and Operating Systems Support for Digital Audio and Video, March 2015, Pages 55-60, https://doi.org/10.1145/2736084.2736091.
4. “Achieving Broadcast-Grade Low Latency in Live Streaming” in Streaming Media. Nov/Dec 2018, Vol. 15 Issue 8, p16-25. 10p.