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Distributed Processing for Content Based Lecture Video Retrieval on Hadoop Framework

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Abstract : There is huge amount of lecture video data available for public use, and many more lecture videos are being created and uploaded every day. Searching for videos on required topics from this huge database is a challenging task. Therefore, an efficient method for video retrieval is needed. An approach for automated video indexing and video search in large lecture video archives is presented. As the amount of video lecture data is huge, it is very inefficient to do the processing in a centralized computation framework. Hence, Hadoop Framework for distributed computing for Big Video Data is used. First, step in the process is automatic video segmentation and key-frame detection to offer a visual guideline for the video content navigation. In the next step, we extract textual metadata by applying video Optical Character Recognition (OCR) technology on key-frames. The OCR and detected slide text line types are adopted for keyword extraction, by which both video- and segment-level keywords are extracted for content-based video browsing and search. The performance of the indexing process can be improved for a large database by using distributed computing on Hadoop framework.

Keywords : video lectures, big video data, video retrieval, hadoop
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