

SUMMARY OF Ph.D. DISSERTATION

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| School Graduate School of Science and Technology | Student Identification Number | SURNAME, First name ABE, Hironobu |
| Title A Study on the Constructing Method for Video Hypermedia System and its Applications | | |
| Abstract This paper describes a study on the constructing method for video hypermedia system and its applications. A video hypermedia system is a system, which makes hyperlinks between the area including the objects in movie and related information and be able to navigate hyperlinks intuitively by selecting the area in movie directly with mouse, but it doesn't spread as affairs stand because an effective constructing method for video hypermedia system is not established. This paper classifies the technical components of the constructing method of a video hypermedia system into backend technology, authoring technology, delivery technology and applications, and sets technical issues to each component, and aims to solve these issues. This paper proposes a video object model and management system for establishment of efficient management method of video data about backend technology, anchor setting method by combination of automatic tracking and manual editing for establishment of efficient anchor setting method for video data about authoring technology, an extended event model for establishment of synchronized delivery method of video data and attached information about delivery technology, and a video hypermedia system for elementary education about applications. This paper is composed as follows. Chapter 2 describes related work. Chapter 3 proposes a video object model and management system for establishment of efficient video management method, and describes design and implementation of video object management system for efficient management of video data at video application system, and implementation of a video hypermedia system as an evaluation system. Chapter 4 proposes an anchor setting method by combination of automatic tracking based on motion picture analysis and manual editing for establishment of efficient anchor setting method, and describes implementation of anchor setting software based on proposed method and experiments for evaluation of sport video. Chapter 5 proposes an extended event model for establishment of synchronized delivery method of video data and attached information, and describes implementation of proposed model as encode/decode libraries for Windows Media and MPEG-2 TS, and development of evaluation system using libraries, and experiments for evaluation of real time synchronization performance. Chapter 6 describes design, development and evaluation of video hypermedia system for elementary education. At designing phase of system, we defined system requirements, and designed and developed system on these requirements. After that we created multimedia content for elementary education using this system and made experiments. Chapter 7 concluded these studies, and accomplished the goal about backend, authoring, delivery and applications constructing video hypermedia system, and confirmed the effectiveness of proposed constructing method. | | |