

A Real-Time Spatial DSS for Security Camera Image Monitoring

YOUNG-HWAN PARK

DEPARTMENT OF COMPUTER ENGINEERING

HANSUNG UNIVERSITY

SEOUL, KOREA

E-MAIL: yhpark@hse1.hansung.ac.kr

OOK LEE

DEPARTMENT OF BUSINESS ADMINISTRATION

HANSUNG UNIVERSITY

SEOUL, KOREA

E-MAIL: leo@hansung.ac.kr

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ABSTRACT

This paper presents a real-time Spatial Decision Support System(SDSS) for security camera image monitoring. Other SDSSs are not real-time systems, i.e., they show the images that are already transformed into data format such as virtual reality. In our system, the image is broadcasted in real-time since the purpose of the security camera needs to do it in real-time. With these real-time images, other systems do not add up anything more; the screen just shows the images from the camera. However in our system, we created a motion detection system so that the supervisor(judge) of a security monitoring system does not have to pay attention to it constantly. In other words, we created a judge advising system for the supervisor of the security monitoring system. Most of small objects do not need the supervisor's attention since they could be birds, cats, dogs, etc. if they show up in the screen image. In this new system the system only report the unusual change to the supervisor by calculating the motion and size of objects in the screen. Thus the supervisor can be liberated from the 24-hour concentration duty; instead he/she can be only alerted when the real security threat such as a big moving object like an human intruder appears. Thus this system can be called a real-time Spatial DSS. The utility of this system is proved mathematically by using the concept of entropy. In other words, big objects like human intruders increase the entropy of the screen images significantly therefore the supervisor must be alerted. Thus by proving its utility of the system theoretically, we can claim that our new real-time SDSS is superior to others which do not use our technique.