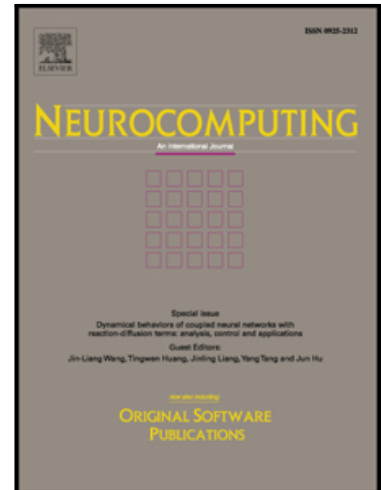


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# Human-Intelligence Workflow Management for the Big Data of Augmented Reality on Cloud Infrastructure

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## ABSTRACT

Human-Intelligence Workflow Management (HIWM) is proposed as a means of dynamically distributing and processing storage work and calculating operations for fast augmented reality (AR) service provision on diverse smart mobile devices based on human behavior to apply the next generation web environments. In HIWM, pre-processing is performed to minimize service response time according to the definition of metadata and user requests for AR services. Basically, to process big data for AR services, a dynamic job distribution scheme is proposed based on the computing capacity of desktops constituting the cloud infrastructures. For final AR services by HIWM, the results of the evaluation of the performance of HIWM in relation to big data processing time are presented. The results show that processing time is 40.56% less than that of the existed methods in proportion to AR service requests.

**Keywords:** Human-Intelligence Workflow Management, Big Data, Cloud Infrastructure.

## 1. Introduction

In recent Information and Communication Technology (ICT) environments, following the advancement of computing technology, services have been provided not only on general desktops but also on diverse smart mobile devices. As the volume of data created in these smart mobile devices has increased greatly, data scales that had been at terabyte levels have been increasing to exceed petabyte and exabyte levels and reach zettabyte levels. Recently, as the utilization of big data processing has increased, related studies have actively been conducted in a range of areas. As the quantity of digital information has increased exponentially, studies of source technologies and utilization have simultaneously been carried out [1-8]. Big data refers not only to huge amounts of data but also to the process of extracting value from diverse types of data and analyzing, predicting, and utilizing the results as information. In particular, big data in augmented reality (AR) services require cloud infrastructures for high performance computing (HPC) and high throughput computing (HTC)

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