인공지능을 활용한 빅데이터 사례분석

박승범[*] · 이상원[**] · 안현섭[***] · 정인환[****]

[*]한국정보화진흥원 경영기획부

[**]원광대학교 정보전자상거래학부(융복합창의연구소)

[***]브라운슈바이크공과대학 경영정보학과

[****]한성대학교 컴퓨터공학과

Case Study on Big Data by use of Artificial Intelligence

Sungbum Park[*] · Sangwon Lee[**] · Hyunsup Ahn[***] · In-Hwan Jung[****]

[*]Department of Management Planning, National Information Society Agency

[**]D. of Information & Electronic Commerce (I. of Convergence & Creativity), Wonkwang University

[***]Department of Wirtschaftsinformatik, Technische Universität Braunschweig

[****]Department of Computer Engineering, Hansung University

E-mail: parksb@nia.or.kr, sangwonlee@wku.ac.kr, hs.ahn@tu-bs.de, ihjung@hansung.ac.kr

요 약

최근에 많은 기업현장에서, 빅데이터에 대한 착각과 이해가 현실화되고 있다. 빅데이터의 보존, 분석, 활용을 위한 일반적인 기술이 빠르게 증가하는 데이터의 양에 효과적으로 대응하기 위해서는 기능이 매우 제한적이다. 하지만, 인공지능이 빅데이터 분석력을 증가할 수 있는 몇 개의 가정이 존재한다. 본 연구에서는 인공지능 기술을 빅데이터 분석에 접목시키려는 노력을 보인 실무사례에 대해 연구하려고 한다. 우선 인공지능의 다양한 기술과 인공지능과 빅데이터 간의 관계에 대한 연구를 하고, 인공지능을 이용한 빅데이터 기업사례 분석을 수행하겠으며, 미래 빅데이터에 대한 역할도 언급하고자 한다.

ABSTRACT

In these days, the delusions of Big Data and apprehension about them are coming into the picture in many business fields. General techniques for preservation, analysis, and utilization of Big Data are falling short of useful techniques for the volume of fast-increasing data. However, there are some assertions that the power of analysis and prediction of Artificial Intelligence would intensify the power of Big Data analysis. This paper studies on business cases to try to graft the Artificial Intelligence technique onto Big Data analysis. We first research on various techniques of Artificial Intelligence and relations between Artificial Intelligence and Big Data. And then, we perform case studies of Big Data with using Artificial Intelligence and propose some roles of Big Data in the future.

키워드

Big Data, Artificial Intelligence, Data Analysis, Infrastructure

I. Introduction

The delusions of Big Data and apprehension about them are nowadays coming into the picture in many enterprises. Even though general techniques for preservation, analysis, and utilization of Big Data are falling short of useful techniques for the volume of fast-increasing data, there are some assertions that the power of analysis and prediction of Artificial Intelligence (AI) would intensify the power of Big Data analysis. Now, we research on business cases in order to link Big Data analysis the AI technique. After

checking out some techniques of AI and relations between AI and Big Data, we perform case studies of Big Data with using AI and propose some roles of Big Data in the future.

II. Relation between AI and Big Data

AI is a branch of computer science which develops intelligent machines and software. As intelligent agents, AI perceives its environment and takes actions that maximize its chances of success. AI research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other. The major goals of AI include reasoning, knowledge, planning, learning, communication, perception and the ability to move and manipulate objects. The application fields of AI are so various as follows; Pattern recognition, Natural language processing, Automatic Control, Robotics, Automatic Control, Computer vision, Machine Learning, Quantum computer, Automated Reasoning, Cybernetics, Data mining, Intelligent Agent, and Semantic Web. The relation between AI and Big Data could be defined as mutually supported effect. That is to say that the ability of analyzing and forecasting of AI has something to do with reliability and reality of Big Data. If AI gets together with Big Data, so called Win-Win effects would be created by mutually supporting each other. The huge volume of Big Data could increase the research credibility and the realistic possibility of AI. Big data could produce better intellectualized and valuable services by use of the AI's ability of analysis, inference, and prediction. Consequently, AI and Big Data could have a considerable number of synergy effects on each. AI is a core infrastructure so as to produce customized services for Big Data. Since massive data are tied up with managerial activities and problems in these days, the technique of AI is absolutely needed to solve the problems empirically. The practical utilization of Big Data should be performed in the fields of AI as well as Data Management Systems, Customer Relationship Management, Supply Chain Management, and Enterprise Resource Planning.

III. Business Cases of Big Data on AI

There are various business cases of Big Data on the basis of AI (Figure 1). Google Translate Systems automate language translation by use of statistical and AI techniques such as spell-checking, voice recognition, image recognition, and so forth. Apple Inc.'s Siri service is an intelligent personal assistant and knowledge navigator by use of AI. The application uses a natural language user interface to answer questions, make recommendations, and perform actions by delegating requests to a set of Web services. MetaCarta is a famous AI technique system with geographical tracking service. Goole Flu Trends is also an example of AI with Big Data.

Figure 1. Business Cases of Big Data on AI

IV. Conclusions

Nowadays, vistas of the future are getting more important because of the rapid changing circumstances of economy, society, technology, and business. In order to maximize the possibility of Big Data and create it values, it is a compulsory work to graft AI onto Big Data. So, it is needed to approach strategically to Big Data and AI. Various business models with both Big Data and AI should be developed and human resources should be strategically fostered.

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