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[TITLE]

Obtaining new information from interconnected data

[MAIN BODY]

To enable the utilization of wide-ranging meteorological information for forecasting weather and preventing disasters, it is important to obtain useful information from not only observation data but also large amounts of information of various types, such as news articles and information from ordinary people. To that end, I would like to explore methods for obtaining new information from the interconnection of diverse information by applying the results of research into image processing and image searching.

Making a database of typhoon images available to the public

The typhoon information website "Digital Typhoon" made available in 2003 is an example of the results of such research. The core data used by this system is a database of over 140,000 images of typhoons taken by meteorological satellites over 25 years starting from 1981. In addition, the system also accumulates data on the path and scale/windspeed of each typhoon, observation data obtained by AMeDAS, and information collected and edited by people, such as news articles. The system is designed to correlate and organize all typhoon-related information. The Digital Typhoon website is open to the general public, and sees a rise in the number of accesses during the typhoon season.

The Digital Typhoon database provides information which cannot be obtained from any other database, including that of the Meteorological Agency. For instance, historical information, such as "the number of typhoons that struck the vicinity of a specific location," can be easily obtained from Digital Typhoon. Weather is difficult to forecast accurately even if large-scale numerical data and a supercomputer are employed; therefore, empirical knowledge of

specialists and analysis of past cases are very important for making accurate predictions. Digital Typhoon serves as a powerful tool for forecasting weather.

Creating new information based on scientific observation data and specialists' experiences

Information extracted from vast amounts of diverse data is much richer and much more extensive than the information obtained from simple numerical data. Such information can be very useful. It can be used to compare with past experiences or records and find out that, for example, "an approaching typhoon resembles a typhoon we had XX years ago," so that effective measures can be planned for the prevention of disasters.

As explained above, one of the features of Digital Typhoon is the capability to enable users to search for similarities between a current typhoon and past typhoons and provide pertinent information that is useful for judging the present typhoon's conditions. Digital Typhoon also plays an important role in raising awareness of disaster prevention, based on lessons learned from past typhoons.

Another feature is that it allows ordinary people to contribute information. When people in the areas directly in the path of a typhoon send firsthand information to Digital Typhoon through blogs, the system compiles and consolidates the received "live" information. I plan to construct a system that can transmit information in an easier-to-use way, such as by mobile phone.

(Interviewed and summarized by Atsushi Saito)