Getting Orientation in Complex Information Spaces as an Emergent Behaviour of Autonomous Information Agents

Results in Brief

A time series analysis tool

A time series analysis tool has been developed by the Greek Foundation for Research and Technology. Performing in a Java based environment for higher interoperability, it detects time series with large databases where context information inherent in time series needs to be extracted.

DIGITAL ECONOMY

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Recording lottery numbers or the value of the stock exchange index for a certain period of time, a sequence of numbers called time series can be generated. When these sequences are related to non-random phenomena or processes, their analysis could reveal significant information for the behaviour of the phenomenon under examination. Usually the time series consist of thousands of data and their analysis requires special mathematical and software tools.

Within the framework of the IRAIA project, the Greek Foundation for Research and Technology (FORTH) developed a software tool for the analysis of specific time series parameters. The tool developed by FORTH is not one of the usual time series

analysis software tools, which include a large variety of complex mathematical functions and examines various types of parameters. This tool has a special feature for detecting time series within big databases and aims to integrate time series coherences with coherent text-reference collections, both stored in databases.

Because of these characteristics it can be used perfectly well for prediction and clustering purposes and could provide indications as to whether one series is having an impact on another. As an example, when a variable that describes an economic phenomenon affects another one, then this impact can be better analysed, and hidden information could be extracted by being expressed in meaningful values of numeric sequences rather than on the basis of hard to interpret textual information.

The tool has been developed in a Java environment in order to achieve a high degree of interoperability. It can find further application in situations where context information that is inherent in purely numeric documents like time series needs to be extracted.

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