

A family of software components to deliver solutions for the interpretation of monitoring data

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Abstract. In this paper we summarize the results of our efforts, during the last ten years, to apply artificial intelligence techniques to the interpretation of engineering monitoring data. These efforts led us to create a set of software components which can be adapted to develop *real-world* applications to face specific customers' requirements, and to deploy several systems for the on-line interpretation of data coming from automatic monitoring systems of large dams, monuments, and landslides.

1. Introduction and History

Ten years ago our group started applying AI techniques to improve the ability of automatic systems to provide engineering interpretations of data streams coming from monitored structures. In the following years some applications were developed and are now in service. They range from monitoring of dams to monuments, and finally the same set of concepts and software components was applied to landslides. During the various developments, we moved, with some success, from applied research to the delivery of industrial solutions for our clients.

This led us to acquire knowledge and experience and to create a set of software components collectively called MISTRAL which can be adapted to develop a particular solution for a specific client.

The aim of this paper is to provide an overview of the existing set of components, recall the conceptual structure and the behavior of the system¹ and give quantitative data and qualitative comments about the results gained until now.

2. Software Components, Solutions and Enabling Technologies

[...]

3. Delivered Solutions

[...]

¹ we do not mean to deal here with the details of our interpretation systems, but we provide references to other publications that are more concerned with modeling techniques and implementation issues

4. System Overview and Underlying Concepts

[...]

5. Quantitative Results: Report from a Specific Case

[...]

6. Impact on the Organization

[...]

7. Future Developments

[...]

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