

Foreword

KNOWLEDGE IS THE KEY

Presenting information in a visual way is increasing since the advent of the tablet PC, which altered the meaning of mobility. The end user has become very demanding: they would like to configure their webpage, they ask to customize the way their preferred e-newspaper is represented, to be updated by the latest technology, to subscribe to some e-magazines, etc. All these features are available today by using configurable databases interacting with the visual page, namely the front-page. Some end-users would like to use this technology without any restrictions. The only restriction which makes any difference is the behavior of the user, and the user's knowledge of the different steps. Cognitive learning process integrated in the different aspects of web design can help the user.

Cognitively Informed Interfaces arrive into the world at a time when cognitive science is gradually attracting an increasing amount of attention to its findings and projects. For example, Siri, which is an application on the new iPhone 4S, is in fact an implementation of an artificial intelligence voice recognition software that uses production rules in the form of **{If..., then..., else...}** to perform the role of a cognitive assistant to users of the iPhone 4S. Siri is a cognitively informed Interface.

This book represents a set of solutions to a variety of problems, which use the graphical interface as a medium of visualization. It goes from healthcare-based problems, to learning method problems, ending in some new approaches on future methods, which could be promising for the next market need.

All chapters show the ability of implementing interactive systems, which can adapt with the behavior of each user, to increase the productivity in the business area, to promote the quality of analysis in the domain of educational process, or as a tool used in the healthcare sector. Nowadays, most of the Information Technology tools are based on a cloud area available to users regardless of place and time of delivery. This can be configured by the user or automatically by studying the behavior of the end user. The choice depends on the application and the type of user; this, in turn, determines the importance of the cognitively informed interface.

In education, an idea is presented to make a difference in the next generation of eLearning resources and eBooks. It is the change from a classical eResource (static), to a dynamic eResource, which gives a margin of flexibility to the words by representing their meanings, whether by sound or by animation. It is the first step to create a global repository of resources, which offers an adaptable resource to each learning model. More details of the idea can be found in Chapter 18.

Nowadays, the Learning Management Systems (LMS) that track student activities need a personal tutoring interaction, which necessitates additional staff. To reduce this effort, and to have a dynamic

generation of student activity, it's a must to have an adaptive tutoring system integrated to the LMS which can be the agent to track and analyze student activities in the dedicated course.

Despite the importance of education as a highly considered area of application, healthcare is indeed a strong competitive domain with the same level of importance, where human interaction is not sufficient to make some serious and crucial decisions. An idea was presented to improve the observation of the black hole in a vascular system by identifying the suspicious areas, in comparison to other images taken from the same patient by implementing Curved Planar Reformation visualization; this can result in a significant efficiency improvement, compared to older methods.

Another domain where healthcare is concerned is when gazing is added to the communication protocol of the mobile phone, thus enabling the disabled to deal with mobile phones by giving orders or interacting with the mobile either by touch screen or by gazing. It is a very promising application for the full interactivity between humans and mobile phones. It can be equally applied to Tablet PCs and deployed to schools to help students be guided to their educational interests.

All the ideas presented in this book, creative and enjoyable as they are when gone through in detail, end up in the very same vision of improving our lifestyle and leading us to a better future, especially in the education and health systems. It will be a great loss not to see most of the presented ideas implemented in future generations of mobile learning devices, such as the Tablet PC, and integrated into our Identity Card, where our own healthcare personal info is stored, and when our future reading would involve a dynamic eBook.

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