SCOPE

This book is devoted to the interdisciplinary community at the frontiers of the fields of artifical intelligence, web technologies, education, pedagogic, psychology and cognitive sciences, who carry out rigorous research and applications devoted to the Intelligent and Adaptive Educational-Learning Systems. So the book covers the basic theories, architectures, paradigms, approaches and case studies of such a field.

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Educational learning systems (ELS) represent computer-based approaches devoted to spread educational services for teaching and learning mainly through the Internet. When the development of ELS accounts artificial intelligence techniques (e.g., acquiring and representing knowledge, make inferences and automatic learning) they become intelligent.

ELS are adaptive, once they pursue to adapt themselves to satisfy users’ needs, such as: navigation, interaction, content authoring, delivering, sequencing, assessment, evaluation, assistance, supervision, collaboration… Hence, ELS that include some kind of intelligent and adaptive functionality are called intelligent and adaptive ELS (IALES).

This book reveals a sample of current work in the IALES, where researchers and practitioners of fields such as pedagogy, education, computer sciences, artificial intelligence, and graphic design join efforts to outcome frameworks, models, methods, systems and approaches for innovate the provision of education and enhance the learning of students.

This book is devoted to the “Intelligent and Adaptive Educational-Learning Systems”. It privileges works that highlight key achievements and outline trends to inspire future research.

This volume is the result of one year of effort, where more than forty chapters were rigorous peer reviewed by a set of ninety reviewers. After several cycles of chapter submission, revision and tuning based on the KES International quality principles, twenty works were approved and organized into four sections: Modeling, content, virtuality and applications.

Authors, reviewers and editors of this book expect this volume is of interest to researchers, practitioners, professors and postgraduate students aimed to update their knowledge and find out targets for future work in the field of artificial intelligence on education.