# Table of Contents

**Foreword** by Gerhard-Wilhelm Weber and Pandian Vasant .......................................................... xvi

**Foreword** by Gonca Telli Yamamoto ........................................................................................................ xviii

**Foreword** by Omer Deperlioglu .................................................................................................................. xx

**Preface** .................................................................................................................................................. xxi

**Acknowledgment** .................................................................................................................................. xxviii

## Chapter 1
On the Intersection of Artificial Intelligence and Distance Education .............................................. 1
*Utku Kose, Usak University, Turkey*

## Chapter 2
Global Knowledge Networking (GKN) with Utilizing of Digital Libraries: A Proposed Model........... 12
*Azadeh Heidari, Islamic Azad University, Iran*
*Leila Nemati-Anaraki, Islamic Azad University, Iran*

## Chapter 3
Intelligent Educational Support System ................................................................................................ 32
*Duygu Mutlu-Bayraktar, Istanbul University, Turkey*

## Chapter 4
Designing a Multi-Agent System for Improving the Accounting E-Learning ................................. 47
*Bogdan Pătruț, Vasile Alecsandri University of Bacau, Romania & EduSoft, Romania*

## Chapter 5
Intelligent Questioning System Based on Fuzzy Logic ....................................................................... 72
*Omer Deperlioglu, Afyon Kocatepe Üniversitesi, Turkey*
*Guray Sonugur, Afyon Kocatepe Üniversitesi, Turkey*
*Kadir Suzme, Afyon Kocatepe Üniversitesi, Turkey*
Chapter 6
Review and Proposal for Intelligent Distance Education ................................................................. 95
Ali Hakan Işik, Mehmet Akif Ersoy University, Turkey
Göksel Aslan, Mehmet Akif Ersoy University, Turkey

Chapter 7
A Web-Based Intelligent Educational Laboratory System for Forecasting Chaotic Time Series ...... 110
Utku Kose, Usak University, Turkey
Ahmet Arslan, Selcuk University, Turkey

Chapter 8
Expert Systems in Distance Education .......................................................................................... 136
Duygu Mutlu-Bayraktar, Istanbul University, Turkey
Esad Esgin, Marmara University, Turkey

Chapter 9
For an Intelligent E-Learning: A Managerial Model Suggestion for Artificial Intelligence
Supported E-Learning Content Flow ......................................................................................... 149
Utku Kose, Usak University, Turkey

Chapter 10
Resolving the Paradox of Overconfident Students with Intelligent Methods ......................... 161
Denis Smolin, American University in Bosnia and Herzegovina, Bosnia
Sergey Butakov, Concordia University, Canada

Chapter 11
Design and Development of an Expert System Shell Program and Evaluation of Its
Effectiveness ............................................................................................................................... 175
Aslihan Tufekci, Gazi University, Turkey

Chapter 12
An Example Application of an Artificial Intelligence-Supported Blended Learning Education
Program in Computer Engineering .............................................................................................. 192
Tuncay Yigit, Suleyman Demirel University, Turkey
Arif Koyun, Suleyman Demirel University, Turkey
Asim Sinan Yuksel, Suleyman Demirel University, Turkey
Ibrahim Arda Cankaya, Suleyman Demirel University, Turkey
Utku Kose, Usak University, Turkey

Chapter 13
Agent-Based Distributed Intelligent Tutoring System Using Case-Based Reasoning .................. 211
Shweta, Banasthali University, India
Praveen Dhyani, Banasthali University, India
O. P. Rishi, University of Kota, India
Chapter 14
Evaluation of Clustering Methods for Adaptive Learning Systems ................................................. 237
Wilhelmiina Hämäläinen, University of Eastern Finland, Finland
Ville Kumpulainen, University of Eastern Finland, Finland
Maxim Mozgovoy, University of Aizu, Japan

Chapter 15
Evolutionary Approach for Automatic and Dynamic Modeling of Students’ Learning Styles .......... 261
Fabiano Azevedo Dorça, Federal University of Uberlandia, Brazil

Chapter 16
Ideas on the Future of Intelligent Web-Based E-Learning ................................................................. 285
Utku Kose, Usak University, Turkey

Compilation of References .................................................................................................................. 298

About the Contributors ..................................................................................................................... 323

Index.................................................................................................................................................. 328