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About the Author:
Saroj Kaushik, Ph D in Computer Science from Indian Institute of Technology Delhi, is currently a Professor in the Department of Computer Science & Engineering at Indian Institute of Technology Delhi, India. She has been teaching the course on AI to undergraduate and postgraduate students along with other computer science courses and has a teaching experience of more than three decades. She has published more than 65 research papers in international and national journals and attended several conferences. She has supervised many students at graduate and undergraduate (M Tech and B Tech) levels for their major projects and has also successfully guided Ph D students. She is a Fellow member of IETE (Institution of Electronics and Telecommunication Engineers), India, and a life member of CSI (Computer Society of India). Her research interests are mainly in areas related to AI, such as Knowledge-based Systems, Agent Technology, Natural Language Processing, Semantic Web Technologies, and many more.

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About the Book:

This textbook *Artificial Intelligence* is designed to provide comprehensive material to undergraduate and graduate students on the vast and fast-growing subject of Artificial Intelligence. The book has been written keeping in mind the syllabi designed for courses on AI in various technical institutions and universities in India and abroad. The book can serve as a textbook for the first-level course for one full semester on AI and will also provide study material to computer professionals who wish to expand their knowledge.

The main topics covered in the book include problem-solving using intelligent searches and planning, knowledge representation techniques, game playing, first-order predicate logic and Prolog (programming in logic) programming language, uncertainty handling, expert systems. The language Prolog has been used throughout the book to write programs for problems to be solved using AI techniques. In addition, some advanced topics such as machine learning, fuzzy logic, artificial neural network, evolutionary computing, advanced knowledge representation techniques, agent technology and natural language processing have been included in detail.

Each chapter in the book has been carefully developed with the help of several pedagogical features. A large amount of effort has been put in to ensure that every concept discussed in the book is explained with the help of examples as far as possible. Pseudo algorithms for various methods and techniques are included throughout the book to increase the comprehensibility of the topics and demonstrate their applications.

**Key Features**

- The approach has been kept simple and student-friendly to ensure that every student can derive maximum possible knowledge from the book.
- Every chapter incorporates useful pedagogical features such as solved examples, detailed illustrations, tables, algorithms, and end-of-chapter exercises that supplement the topics presented therein.
- The presence of solved examples and algorithms aids in sharpening students’ understanding of the concepts covered in the chapter.

**Table of Contents**

1. Introduction to Artificial Intelligence
2. Problem Solving: State-Space Search and Control Strategies
3. Problem Reduction and Game Playing
4. Logic Concepts and Logic Programming
5. Prolog Programming Language
6. Advanced Problem-Solving Paradigm: Planning
7. Knowledge Representation
8. Expert System and Applications
9. Uncertainty Measure: Probability Theory
10. Fuzzy Sets and Fuzzy Logic
11. Machine-Learning Paradigms
12. Artificial Neural Networks
13. Evolutionary Computation
14. Introduction to Intelligent Agents
15. Advanced Knowledge Representation Techniques
16. Natural Language Processing
- References
- Index
Interview with Saroj Kaushik

What is the target market for your book?

The book *Artificial Intelligence* is targeted for undergraduate and graduate-level engineering students as a textbook for a first-level course in Artificial Intelligence and will also provide study material to computer professionals who wish to expand their knowledge by studying AI.

Why did you write this book?

There is no single book that can be considered to be a complete textbook on the subject; therefore, this book has been written keeping in mind the syllabi of AI course for various technical institutions and universities in India and abroad. This book can serve as a textbook for the first-level course for one full semester on AI. It covers all the topics required for such a course.

Do you see any change in the way the course has to be taught by the faculty?

The course on Artificial Intelligence should focus on developing skills of the students to solve real-life problems or applications intelligently using AI techniques as these problems are difficult and complex in nature. Finding approximately good solution rather than optimal solution in reasonable time works fine in a real-life scenario. Focus must be given to develop and implement intelligent systems practically using AI techniques rather than simply studying chapters in a theoretical manner.

Why do you feel that your book is different than the existing ones in the market?

The main emphasis and feature of the book is to explain concepts with the help of examples as far as possible. Pseudo algorithms for various methods and techniques are included throughout the book to increase the comprehensibility of the topics and demonstrate their applications.

In addition to traditional material on problem solving using intelligent searches, planning, knowledge representation techniques, expert systems, uncertainty handling, and machine learning, the book contains the evolution of Prolog from first-order logic, soft-computing paradigm consisting of fuzzy logic, artificial neural network, evolutionary computing. It also contains chapters on agent technology and natural language processing. Prolog has been used as an AI language to implement most of the algorithms in the book.

What are the three points that you will tell instructors and students about this book?

To the students:

- Understand each concept thoroughly by solving related problems rather than mugging them up.
- There are linkages between some of the chapters, so avoid reading them in isolation.
- Solve the problems given at the end of each chapter.

To the faculty:

- Make sure that at the end of semester, student gets a skill of writing good AI programs using Prolog.
- Make the students do exercises given at the end of each chapter.
- The material in the book is presented in simple and understandable form. Examples are given to explain most of the concepts.