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Book Review:

Introduction to Evolutionary Computing

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This book was written by its two authors with the explicit intention that it would become one of the standard textbooks on evolutionary computation, or ECO, known as "the state of the art in Goldberg (1989), Davis (1991), Michalewicz (1992, 1996), and Koza (1992, 1993, and Mitchell (1996).

It aims to be a comprehensive account both of theory and in practice of the general field of "Evolutionary Computation". For those familiar with Goldberg's classic text, "Genetic Algorithms in Search, Optimization, and Machine Learning", this book combines the strengths of both. It presents the theory in a clear and didactic manner that is pleasing. However, as a second edition is published, I hope the authors will do a better job of editing their text. The result would make this book one of the best of its kind. I will take up this book again at the end of this review.

The first advantage of this book is that it is comprehensive, structured, and methodical. It presents its material in a logical linear manner that is easy to follow. The book consists of three comprehensive chapters on what evolutionary computation is about, and then branches into 14 comprehensive chapters describing the basics of the 3 main paradigms of "GA" as the authors call them, that is to say, evolutionary computation (EC), namely: (2) Genetic Algorithms, (3) Genetic Programming, and (4) Genetic Algorithms. As the authors explain in their preface, this approach was found to be better for the reader.

In Chapter 1, the authors describe the 3 paradigms, or "blueprints", that they consider to be the key paradigms of evolutionary computation. The paradigms are: (1) Genetic Algorithms, (2) Genetic Programming, and (3) Genetic Algorithms. Each of these paradigms is described in detail, and examples are given to illustrate their use.

Chapter 2 presents an overview of the 3 paradigms, covering about 80 pages. The authors follow several exercises at the end of each chapter for readers who are interested in understanding. A remarkable feature is the exercises at the end of each chapter, which is another major disadvantage of the book.
be a textbook for the new courses. It would be most useful for students to have a second copy and then use that to work through the four paradigms as if they were real-life problems. At the end of each chapter is a learning list, which is helpful.

One of the main paradigms in the book is the "Learning List", which is used in both new courses and used as a learning tool. The list is divided into a Part I, Part II, and Part III. Part I covers basic concepts and terminology, and is followed by several examples. Part II introduces new paradigms, and Part III provides exercises and further examples.

Chapter 4 introduces the concept of "Learning Lists", and is followed by several exercises and examples. Chapter 5 introduces the concept of "Learning Lists", and is followed by several exercises and examples.

Chapter 6 introduces the concept of "Learning Lists", and is followed by several exercises and examples. Chapter 7 introduces the concept of "Learning Lists", and is followed by several exercises and examples.

Chapter 8 introduces the concept of "Learning Lists", and is followed by several exercises and examples. Chapter 9 introduces the concept of "Learning Lists", and is followed by several exercises and examples.

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LC in the near future. The authors should know about such developments since these developments have been "published" since late 1990s. They missed that point.

I have to return to the major disadvantage of this book mentioned earlier in this review, namely its sloppy editing. Despite the considerable strengths of the book, what I liked most in reading it were the many tools/techniques of the first author, who is not a native English speaker. As any reader who has reviewed papers for conferences or journals can readily attest, expert English is a considerable plus. Of course, non-native English-speaking authors are at a disadvantage in this regard, nevertheless the authors are still more of the potential users of this book will be native English speakers who have a choice of other books on similar topics. That may be why authors whose English is perfect.

It was painfully obvious which of the two authors wrote which sections. The math is not as good as it could be. For example, this paper is not well written. Words are missing, with singular verbs plural nouns, with missing words, many illegible.

What is my "bottom line" opinion on this book? Briefly, this book is well, I just hope it is edited into a second edition, so that the authors can revise their sloppy, coded text thoroughly. This converting a potentially good book into a really good one. The book does have the advantage that it is clear, comprehensive and modern, with a global view point to the major paradigms of LC. But, it really is a pity that so much of this excellent text was.

References