The Design Of Innovation: Lessons From And For Competent Genetic Algorithms (Genetic Algorithms And Evolutionary Computation)

Synopsis

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Book Information

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Customer Reviews

Genetic Algorithms, GAs, have had a brief flowering of successful application to optimization

searches and their limitations have become apparent. One consequence is that a variety of alternative evolutionary computational approaches are being investigated. Another road, much less travelled, is to examine the core mechanisms of the GA concept and try to develop a second generation of improved algorithms. This is difficult work because of the very nature of the core building block theory as first proposed by John Holland. For true inovation, building blocks must be synthesized, evaluated, and combined in sucessive hierarchies, all without external intervention. David Goldberg, a stalwart Holland desciple, has been valiantly trying to extend Holland's main theorem, which applied to infinite populations and hypthetical spaces, to finite populations on real problems.This book is actually a research monograph reporting on the results of this research. The title "The Design of Innovation" sets up a high level of expectation but the subtitle "lessons learned from and for competent GAs" is probably right. The book offers some useful insights into the internal workings of GAs and their implication for understanding true innovation. However, despite the introductory claim of an engineering approach, the book never gets around to actually showing practitioners how to apply the lessons, nor does it give direct evidence that they work as claimed (although references to recent papers which presumably demonstrate success are given).It is perhaps ironic that the goal for GAs has been downgraded from "universal" (as first claimed by Holland) to "competent".

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