Ravipudi Venkata Rao

Jaya: An Advanced Optimization Algorithm and its Engineering Applications

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Jaya: An Advanced Optimization Algorithm and its Engineering Applications

- Presents a comprehensive review of the latest international research and development trends for design optimization of various systems and processes in different engineering disciplines
- Provides real-world case studies of applications of different versions of Jaya algorithm in the fields of mechanical, thermal, manufacturing, electrical, computer, civil, and structural engineering
- Compares the results of applications of the Jaya algorithm and its versions with other advanced optimization algorithms and highlights the optimization algorithms that achieve the best performance
- Includes the computer codes of different versions of Jaya algorithm in MATLAB

This book introduces readers to the "Jaya" algorithm, an advanced optimization technique that can be applied to many physical and engineering systems. It describes the algorithm, discusses its differences with other advanced optimization techniques, and examines the applications of versions of the algorithm in mechanical, thermal, manufacturing, electrical, computer, civil and structural engineering. In real complex optimization problems, the number of parameters to be optimized can be very large and their influence on the goal function can be very complicated and nonlinear in character. Such problems cannot be solved using classical methods and advanced optimization methods need to be applied. The Jaya algorithm is an algorithm-specific parameter-less algorithm that builds on other advanced optimization techniques.

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