BOOK REVIEW

Mechatronic Systems: Design, Performance and Applications

Editor: Mohamed Arezki Mellal (Faculty of Engineering Sciences (FSI), M'Hamed Bougara University (UMBB), Boumerdès, Algeria)

The book, *Mechatronic Systems: Design, Performance and Applications*, an anthology edited by Professor Mohamed Arezki Mellal, is a highly valuable contribution to this diverse and dynamic field. Professor Mellal, definitely a "world citizen," has skillfully arranged highly diverse research tracts – yet firmly united by the common theme expressed cogently in the title – into a coherent whole. The research results addressed within this anthology addressed, in eight chapters:

1. Sag calculations, e.g., in construction subject to high winds
2. Car-like robots
3. Control of mechanical systems under uncertainty
4. Design of mechatronic systems using a rigorously defined methodology
5. Determination of mechanical qualities with test rigs
6. Use of bond graphs for estimating faults in mechatronic systems
7. Application of a genetic algorithm to the design of controllers
8. Applications of virtual reality to teleoperations systems

In keeping with the importance of the overall topic, to which all eight chapters contribute, and in keeping with Professor Mellal's "world citizen" status and well-earned reputation, these papers come from a broad spectrum of academic specialties, universities, cultures, and nations.

The book includes affiliations of all authors and a comprehensive (but inevitably not quite perfect) index. For example, neither "adaptive Chebyshev functional link neural network" nor its acronym "ACFLNN" appears in the index, although "adaptive functional-link neural network" does. Each chapter includes a commendably extensive collection of references. Occasionally a reference is an Internet address; the value of such references can profitably be enhanced with a "last date accessed" notation. A bit disconcertingly, the reference format of the Çetin-Bahtiyar-Beyhan and the Su-Chen chapters differs from that of the other six chapters. Minor problems of English occasionally appear; e.g. "One example is the parallel parking a car," the typographical error "umuch," "there must be used normalization process" (instead of "a normalization process must be used"), and "develop family" (for "developed a family"). The pedant in this reviewer twitches when "gaussian" (such a revered mathematician) is not capitalized. The clarity and usefulness of figures and diagrams through the work are of a very high standard. When appropriate, color is used helpfully in various figures. Mathematical notations are standard, clear, and consistent.

This book, of very high quality, deserves to find a place on the bookshelves of active researchers and educators in the field, as required reading (likely of one or two most pertinent chapters) in advanced graduate seminars for PhD students in this field, in the reference books of industrial practitioners undertaking pertinent work, and most certainly in university libraries.

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