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The Industrial  
Electronics  
Handbook

**CONTROL AND  
MECHATRONICS**

Edited by  
Bogdan M. Wilamowski  
J. David Irwin



# Mechatronics Ebook

# Control And Mechatronics The Industrial Electronics Handbook

**John Michael Golio, Janet Golio**



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intelligence in decision making processes they have made substantial contributions to the solution of very complex problems. As a result the field of computational intelligence has branched out in several directions. For instance artificial neural networks can learn how to classify patterns such as images or sequences of events and effectively model complex nonlinear systems. Simple and easy to implement fuzzy systems can be applied to successful modeling and system control. Illustrating how these and other tools help engineers model nonlinear system behavior, determine and evaluate system parameters and ensure overall system control. *Intelligent Systems* Addresses various aspects of neural networks and fuzzy systems. Focuses on system optimization covering new techniques such as evolutionary methods, swarm and ant colony optimizations. Discusses several applications that deal with methods of computational intelligence. Other volumes in the set: *Fundamentals of Industrial Electronics*, *Power Electronics and Motor Drives*, *Control and Mechatronics*, *Industrial Communication Systems*.

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**The RF and Microwave Handbook** John Michael Golio, Janet Golio, 2008 The growth of wireless technology over the past decade is reflected in this guide It covers WiMAX broadband cable a



comprehensive range of other topics This volume RF and Microwave Applications and Systems includes a wide range of articles that discuss RF and microwave systems used for communication and radar and heating applications Commercial avionics medical and military applications are addressed An overview of commercial communications systems is provided Past current and emerging cellular systems navigation systems and satellite based systems are discussed Specific voice and data commercial systems are investigated more thoroughly in individual chapters that follow Detailed discussions of military electronics avionics and radar both military and automotive are provided in separate chapters A chapter focusing on FR microwave energy used for therapeutic medicine is also provided Systems considerations including thermal mechanical reliability power management and safety are discussed in separate chapters Engineering processes are also explored in articles about corporate initiatives cost modeling and design reviews The book closes with a discussion of the underlying physics of electromagnetic propagation and interference In addition to new chapters on WiMAX and broadband cable nearly every existing chapter features extensive updates and several were completely rewritten to reflect the massive changes areas such as radio navigation and electronic warfare

**Digital Avionics Handbook** Cary R. Spitzer, 2007 This 2 volume set includes new chapters on the time triggered protocol communications vehicle health management systems development guidelines and certification considerations and the Genesis platform It also discusses avionics building blocks and covers key development activities

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