
Preface

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Biographical notes: W.L. Xu is Professor of Mechatronics in School of Engineering and Advanced Technology, Massey University, Auckland, New Zealand. He received the PhD degree in Mechatronics and Robotics from Beijing University of Aeronautics and Astronautics, China, in 1988. Prior to joining Massey in 1999, he worked at the City University of Hong Kong, University of Stuttgart, Germany, and Southeast University, China. His current research interests include chewing robotics, orthopaedic robotics and diagnostic biosensor. He serves as Associate Editor for *IEEE Transactions on Industrial Electronics* and Editor for *International Journal of Intelligent Systems Technologies and Applications*.

Tom J. Moir is a Senior Lecturer in the School of Engineering and Advanced Technology, Massey University, Auckland, New Zealand. He received his BSc in Control Engineering and PhD in Estimation and Control Theory in 1979 and 1984, respectively. He has published over 80 papers in the field of signal processing and control theory, and holds a joint patent on the *Amplitude Locked Loop* as applied to frequency modulated signals. Recently, he has become involved with Smarthouse technology for the disabled.

Johan Potgieter is a Senior Lecturer and Researcher in Mechatronics and Robotics in the School of Engineering and Advanced Technology at Massey University (Auckland). His research, concentrated on the development of alternative carbon-based fuel systems for automotive and marine applications, has been published in international journals and conference proceedings on an ongoing basis. His research addresses the inevitable petroleum-based fuel shortages facing us in the future, leading to the development of a CNG compressive and fuel delivery system for fuel injected vehicles. Energy harvesting and smart sensors for assistive technologies are his current areas of interest. He has worked on the development of the Hulme supercar, with contributions in the areas of chassis, suspension and aerodynamic analysis and design.

Fakhrul Alam is a Senior Lecturer at the School of Engineering and Advanced Technology, Massey University, Albany, New Zealand. He holds a BSc in Electrical and Electronic Engineering (First Class with Honours) and MS and PhD in Electrical Engineering. His research interest includes protocol development wireless network, wireless sensor networks, adaptive signal processing for wireless communication systems, cognitive radio and intelligent traffic systems. He is an elected member of Sigma Xi, the Scientific Research Society.

Mechatronics has become accepted for what it is, the blending of mechanics, electronics and computer control into an integrated design. It forms the basis of an ever-growing list of products and techniques of great technical and commercial value. Mechatronic design can result in products that are much simpler than their intricate and costly predecessors and can make the miracles of yesterday commonplace. The skilful use of sensors and embedded machine intelligence provides significant value addition. Machine vision has emerged from the laboratory to find real applications in diverse fields, e.g. inspection, fault detection, vehicle guidance and robot control.

Low-cost cameras have been developed for multimedia applications, but with their ease of interfacing they offer a whole new field of low-cost vision-based control.

Following the success of its 14 predecessors, M2VIP'08, the 15th International Conference on Mechatronics and Machine Vision in Practice, was held at Massey University in Auckland, New Zealand, 2–4 December 2008. It provided a dynamic forum for international experts and researchers to present and review advances in mechatronics and machine vision that have culminated in practical applications, or promise practical implementation in the very near future.

All 118 papers presented at this conference passed a rigorous refereeing process, first as extended abstracts and then again as full manuscripts. The accepted papers underwent final revision in light of the second round of the reviewing process. Grateful thanks are owed to the international team of reviewers for their diligence in assessing the papers.

The papers selected for this special issue, and another selection that is being published in a special issue of the *International Journal of Intelligent Systems Technology and Applications (IJISTA)*, represent the quality, breadth and depth of the practical side of the research in the field of mechatronics and machine vision.