

CURRICULUM VITAE

I-MING CHEN 陳義明

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ACADEMIC QUALIFICATIONS

Ph.D.	1994	Mechanical Engineering	California Institute of Technology	Pasadena, CA., U.S.A.
M.Sc.	1989	Mechanical Engineering	California Institute of Technology	Pasadena, CA., U.S.A.
B.Sc.	1986	Mechanical Engineering	National Taiwan University	Taipei, Taiwan

CURRENT APPOINTMENT

Associate Professor (01/2002 – present)
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore
Director (07/2006 – present)
Intelligent Systems Center, Singapore Technology Engineering Inc – Nanyang Technology University

PROFESSIONAL EXPERIENCE

Visiting Professor (04/2004 – 12/2004)
Dept of Mechanical Engineering, Massachusetts Institute of Technology, MA, USA

Singapore-MIT Alliance Fellow (08/2002 – 07/2007)
Innovation in Manufacturing Science and Technology Program (IMST)
Nanyang Technological Univ./National Univ. of Singapore/Massachusetts Institute of Technology

Adjunct Professor (05/2002 – 05/2007)
Dept. of Mechano-electronics Engineering, Xian Jiao Tong University, Xian, China

JSPS (Japan Society for Promoting Science) Visiting Scholar (11/1999 - 12/1999)
Dept. of Systems Science, Kyoto University, Kyoto, Japan

Assistant Professor (01/1995 – 12/2001)
School of Mechanical and Production Engineering, Nanyang Technological University, Singapore

Research Fellow (07/1994 - 12/1994)
Dept. of Mechanical Engineering, California Institute of Technology, Pasadena, CA, U.S.A.

Consultant (06/1992 - 06/1993)
Boyd, Casey, and Sampson, San Antonio, TX, U.S.A.

Research Associate (02/1991 - 05/1991)
Tele-robotics group, Jet Propulsion Laboratory, Pasadena, CA, U.S.A.

Research/Teaching Assistant (09/1989 - 06/1994)
Dept. of Mechanical Engineering, California Institute of Technology, Pasadena, CA, U.S.A.

Instructor (01/1987 - 05/1988)
Dept. of Mechanical Engineering, Chinese Military Academy, Kaohsiung, Taiwan

PROFESSIONAL MEMBERSHIPS

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
Member, American Society of Mechanical Engineering (ASME)
Member, American Association for the Advancement of Science (AAAS)
Member, Singapore Industrial Automation Association (SIAA)

RESEARCH INTERESTS

- *Body computing*: wearable sensors, body sensor network, haptic devices
- *Environmental sensing and automation*: wireless sensor & actuator networks, sensor grid
- *Robotics*: modular reconfigurable robots, biomimetic robotics, parallel manipulators, entertainment robots
- *Precision mechatronics*: spherical actuators, piezoelectric actuators, micro- and nano-manipulation systems

RESEARCH GRANT

Active Vibration Control Using Piezoceramic Actuator

- *Ministry of Defense, Singapore [1995-1998, Co-PI, SGD18,000]*

Calibration of Modular Reconfigurable Robot Systems

- *Ministry of Education, Singapore [1997-2000, PI, SGD 244,345]*

Development of Precision Miniature Mechanisms

- *National Science & Technology Board [1997-2001, Co-PI, SGD1,020,000]*

Development of a Flexible Robotic Colonoscopic System

- *National Science & Technology Board [1997-2000, Co-PI, SGD700,000]*

Rapidly Reconfigurable Robotic Workcell

- *Gintic Institute of Manufacturing Technology, Singapore [1997-2001, PI, SGD2,1760,000]*

Simulators for Sensor-Based Autonomous Systems

- *National Science & Technology Board [1998-2001, PI, SGD840,000]*

Biomimetic Underwater Autonomous Systems

- *Ministry of Education, Singapore [1999-2002, Co-PI, SGD124,000]*

Measurement and Calibration of a 6-Axis Reconfigurable Parallel Robot System

- *Ministry of Education, Singapore [2000-2003, Co-PI, SGD72,200]*

Engineered Biomaterials and Tissue Engineering

- *Agency for Science, Technology, and Research [2002-2007, Co-PI, SGD6,000,000]*

Variable-Reluctance Spherical Motor for High-Precision Manipulation

- *Singapore Institute of Manufacturing Technology [2002-2004, Co-PI, SGD90,000]*

Parallel-Kinematics Machine Design for Submicron- and Meso-Scale Manipulation

- *Ministry of Education, Singapore [2002-2005, PI, SGD100,000]*

Task-Oriented Flexure-Based Parallel-Kinematics Positioners

- *Singapore Institute of Manufacturing Technology [2003-2005, Co-PI, SGD1,500,000]*

Smart Suit – A Wearable Embedded Body Motion Processing System

- *Agency for Science, Technology and Research (ASTAR) [2006-2009, PI, SGD600,000]*

Interactive Robotic Lion Dancing System

- *Singapore Institute of Manufacturing Technology [2006-2008, PI, SGD500,000]*

Ultrasonic Motor transfer technology

- *Defense Science Organization [2007-2008, PI, SGD69,000]*

Wearable Body Motion Training Platform

- *NTU Proof-of-Concept Fund [2008-2009, PI, SGD50,000]*

Micro Motor and Actuator for Therapeutic Ingestible Microcapsule

- *ASTAR Medtech Medical Robot Program [2008-2011, Co-PI, SGD456,645]*

Replicating and Processing of Human Body Motion for Participatory Interaction in Co-Space

- *NRF Interactive Digital Media Program [2008-2011, PI, SGD1,415,000]*

PROFESSIONAL SERVICES

Professional Societies

- Member, Technical Committee on Computational Kinematics (IFTToMM) (2001 –)
- Council Member, Singapore Industrial Automation Association (SIAA) (2001-2003)
- Chairman, Singapore Committee for the Technologies of Machines and Mechanisms (SiCToMM – Member Committee of IFTToMM) (2001-2003)
- Chairman, IEEE Robotics and Automation Society, Singapore Chapter (2001-2003, 2006)
- Chairman, Technical Committee on Rapid Prototyping for Robotics and Automation (IEEE Robotics and Automation Society) (2002 – 2007)
- Member, Technical Committee on Robotics (IFTToMM) (2003 –)
- Member of Steering Committee, CISM-IFTToMM Symposium on Robot Design, Dynamics and Control (ROMANSY) (2004 –)
- Member, RoboCup Singapore National Committee (2005 –)
- Deputy Chairman, Technical Working Group on Robotics for World Skill Singapore (WSS) 2006 and World Skill Competition (WSC) 2007

Journal Editors

- Technical Editor, IEEE/ASME Transactions on Mechatronics (2003 – present)
- Editor, Robotica (2006 -)
- Associate Editor, IEEE Transactions on Robotics (June 2007 – present)
- Associate Editor-in-Chief, Frontiers of Mechanical Engineering in China, (High Education Press, China & Springer-Verlag, US) (Dec 2007 – present)

Conference/Symposia Organization

- Program Co-Chairman, IEEE/RSJ Int'l Conf. on Intelligent Robots and Systems (IROS), Hawaii, USA, 29 Oct – 3 Nov 2001
- Co-Chairman, Technical Program, 7th Int'l Conf. on Control, Automation, Robotics & Vision (ICARCV), Singapore, Dec 2002
- Organizer, Italy-Korea-Singapore Workshop on Mechatronics in Medicine and Biology, Oriental Hotel, Singapore, 28 Feb. 2003
- Technical Committee Coordinator, Singapore-MIT Alliance Symposium, Singapore, Jan 2004
- Invited Session Chairman, IEEE Conference on Robotics, Automation, and Mechatronics (RAM), Singapore, Dec 2004
- Publication Chairman, IEEE/ASME Int'l Conf. on Advanced Intelligent Mechatronics (AIM'05), Monterey, CA, USA, July 2005
- General Chairman, IEEE Conferences on Cybernetics and Intelligent Systems, and Robotics, Automation and Mechatronics (CIS-RAM06), Bangkok, Thailand, 7 – 9 June 2006
- Publicity Chairman, IEEE International Conference on Mechatronics and Automation (ICMA'06), Luoyang, China, 2006
- Publicity Chairman, IEEE International Conference on Mechatronics and Automation (ICMA'07), Harbin, Heilongjiang, China, 2007
- General Co-Chairman, IEEE/ASME Int'l Conf. on Advanced Intelligent Mechatronics (AIM'07), Zurich, Switzerland, 2007
- General Co-Chairman, IEEE/ASME Int'l Conf. on Advanced Intelligent Mechatronics (AIM'08), Xian, China, 2008
- General Chairman, IEEE/ASME Int'l Conf. on Advanced Intelligent Mechatronics (AIM'09), Singapore 2009

SUMMARY OF PUBLICATIONS

- Refereed journal papers – 55
- Refereed conference papers – 123
- Book Chapters - 5
- Patent – 2 (pending)
- Book – 1
- Graduate master theses – 6
- Graduate PhD dissertations – 9