

ANNUAL REPORT 2003 NSA TC, IEEE CAS SOCIETY

Chairman: Dr. Wai-Chi Fang
Chair-Elect: Prof. H. K. Kwan
Secretary: Prof. R. Etienne-Cummings

- (1) TC Meeting: The past TC meeting was held on May 29, 2002 during the IEEE International Symposium on Circuits and Systems, Scottsdale, Arizona, May 26-29, 2002
- (2) Conferences or workshops where the NSA TC or members of the TC was/were actively involved in 2002 include the followings:
 - (a) **IEEE International Symposium on Circuits and Systems, Scottsdale, Arizona, May 26-29, 2002.** The NSA TC actively participated in the technical program committee of the ISCAS 2002. Dr. Ahmadi has served as the Chair of the combined NSA and CNN Track. Dr. Fang, Professors Mona Zaghoul, Bob Newcomb, Graham Jullien and Gert Cauwenberghs served as representatives for the track. Prof H. K. Kwan was Co-Chair (with Prof. Mona E. Zaghoul, George Washington University), of the Technical Session on “Neural Network Hardware Architecture and Implementation”.
 - (b) IEEE Conf. Neural Information Processing Systems (NIPS), Vancouver BC, Canada. (Gert Cauwenberghs, Track chair, Emerging Technologies; R. Etienne-Cummings, Co-Chair)
 - (c) 2002 WCCI (World Conference on Computational Intelligence), Hawaii. (C.T. Lin)
 - (d) ICONIP02 (2002) International Conference on Neural Information Processing, Singapore. (C.T. Lin)
 - (e) Government Board meeting of the APNNA (Asia-Pacific Neural Network Assembly) in the ICONIP02. (C.T. Lin)
 - (f) International Solid-State Circuits Conference, San Francisco, CA, 2003 (R. Etienne-Cummings , Session Chairman)
 - (g) NSF Telluride Workshop on Neuromorphic Engineering, CO, 2002 (R. Etienne-Cummings, Invited Speaker)
 - (h) OIDA Workshop, Washington, DC, 2002 (R. Etienne-Cummings, Invited Speaker)
- (3) On going Conferences or workshops where the NSA TC or members of the TC is/are actively involved in include the followings:
 - (a) **2003 IEEE International Symposium on Circuits and Systems, Bangkok, Thailand, May 25-28, 2003.** The NSA TC actively participated in the technical program committee of the ISCAS 2002. Dr. Wai-Chi Fang has served as the Chair of the Neural System and Applications Track. Prof. Robert Newcomb, Prof. Bing Sheu, Prof. Mona Zaghoul, Prof. Gert Cauwenberghs, Prof. H. K. Kwan, Prof. John G. Harris, Prof. Alessandro Rizzo, Prof. Derong Liu, Prof.

Chin-Teng Lin, Prof. Roman Genov, Dr. Csaba Rekeczky, Prof. Pamela Abshire, and Prof. Jun Wang served as Review Committee Members for the track. For the record, I am acknowledging with gratitude their dedication, diligence, fairness, competence and promptness in completing the review process. There are 51 papers submitted for the track. Twenty papers are accepted for 4 lecture sessions and thirteen papers for two poster sessions.

- (b) Prof. H. K. Kwan is the Co-Organizer and Co-Chair of the Invited Session on “New Advances in Recurrent Neural Networks” (with Prof. Derong Liu, University of Illinois at Chicago) at the 2003 IEEE International Symposium on Circuits and Systems, Bangkok, Thailand, May 25-28, 2003.
 - (c) Prof. H. K. Kwan is the Program Committee Member at the 2003 IEEE International Symposium on Circuits and Systems, Bangkok, Thailand, May 25-28, 2003.
 - (d) Prof. Ravi Prakash Ramachandran and Prof. H. K. Kwan are the Co-Organizers and Co-Chairs of the Invited Session on “Speech and Language Processing” at the 2003 IEEE International Symposium on Circuits and Systems, Bangkok, Thailand, May 25-28, 2003.
 - (e) 2003 International Workshop on Globalization Leadership in Circuits and Systems (IWGLCS 2003), May 29-30, 2003, Hsinchu City, Taiwan. (Chairs: Peter Wu and Dr. Bing Sheu; Vice Chair: C.T. Lin)
 - (f) 2003 International Joint Conference on Neural Networks in Portland Oregon, 20-24 July 2003. (C.T. Lin)
 - (g) ISCAS'2004: (Majid Ahmadi, Special Sessions Co-Chair)
 - (h) MWSCAS 2004: (Wai-Chi Fang, Track Co-Chair for Neural Networks and Fuzzy Systems)
 - (i) ICONIP05 (2005) International Conference on Neural Information Processing, Singapore: (Peter Wu, C.T. Lin)
- (4) Short courses and Lectures:
- (a) Invited Lectures: Professor Tamas Roska and Professor Bert Shi gave IEEE Distinguished Lectures in Taiwan on November 11-13, 2002.
 - (b) Invited Short Course: Neural SOC for Image Processing and Computer Vision,” Wai-Chi Fang, National Chiao-Tung University, Taiwan (2003).
- (5) Distinguished Lecturer in 2003-2004
- (a) Prof. C.T. Lin, "Brain-inspired Fuzzy Neural Networks and their Applications".
 - (b) Prof. Gert Cauwenberghs "Support vector machines: from kernels to silicon", and "Adaptive VLSI Microsystems".
- (6) Editorial Services:
- (a) IEEE TCAS-I: Wai-Chi Fang, AE
 - (b) IEEE TCAS-II: Gert Cauwenberghs, AE
 - (c) IEEE Sensors Journal: Gert Cauwenberghs, AE; R. Etienne-Cummings, AE
 - (d) IEEE Trans. on Neural Networks: Jun Wang, AE

- (d) IEEE Trans. on Systems, Man, and Cybernetics - Parts B: Jun Wang, AE
- (f) IEEE Trans. on Systems, Man, and Cybernetics - Parts C: Jun Wang, AE
- (g) Special Issue on "Nanoelectronics and Nanoscale Signal Processing",
Proceedings of IEEE, Guest Editors: Bing Sheu and Peter Wu
- (h) IEEE Circuits and Devices Magazine, Developments in Nano-Giga Systems
Column, Guest Editors: Bing Sheu and Peter Wu
- (i) Special Issue on Integrated Multisensor Systems and Signal Processing, G.
Cauwenberghs, R. Etienne-Cummings, R.W. Newcomb, and M.E. Zaghoul, Eds.,
IEEE Sensors Journal, vol. 2 (6), Dec. 2002.
- (j) Kluwer's AICSP Journal, Special Issue on Smart Sensors, Spring 2003 (planned
publication) (Guest Editor: R. Etienne-Cummings)

(7) Books and book chapters:

- (a) H. K. Kwan, 'Chapter 2 - Fuzzy Filters for Noise Reduction in Images' in
'*Fuzzy Filters for Image Processing*', edited by M. Nachtgael, D. Van der
Weken, D. Van De Ville, and E.E. Kerre, under the Series in Studies in
Fuzziness and Soft Computing, Vol. 122, Springer Verlag, pages 25-53, March
2003, ISBN 3-540-00465-3.
- (b) H. K. Kwan, 'Chapter 13 - Multiplierless Designs for Artificial Neural
Networks' in '*Neural Networks and Systolic Array Design*' edited by David
Zhang and Sankar K. Pal, under the Series in Machine Perception and Artificial
Intelligence, Vol. 49, World Scientific Publishing Company Pte Ltd., pages 301-
325, June 2002, ISBN 981-02-4840-7.
- (c) Wai-Chi Fang, C.T. Lin, "Bio-inspired Computing: From Methods to Real-
World Applications," Kluwer (in progress)

(8) IEEE Services:

- (a) 2003 CAS Society representative to IEEE Nanotechnology Council (Bing Sheu)
- (b) 2003 CAS Society BoG (Prof. Peter Chung-Yu Wu, Orly Yadid-Pecht)

(9) Next NSA TC Meeting will be held on May 28, 2003 during the 2003 IEEE
International Symposium on Circuits and Systems, Bangkok, Thailand, May 25-28, 2003.