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Minute from the Annual General Meeting 2005 of the Cellular Neural Network and Array Computing Technical Committee

(Kobe, 26th May 2005, 12:45 am)

Attendance

Paolo Arena, Sabri Arik, Victor M. Brea, Ricardo Carmona, Marco Gilli, Mika Laiho, Chin-Teng Lin, Yoshifumi Nishio, Ari Paasio, Alessandro Rizzo, Tamás Roska, Bertram Shi, Peter Szolgay, Mamoru Tanaka, Vedat Tavsanoglu, Ronald Tetzlaff, Joos Vandewalle, Akos Zarandy.

Matters arising from minutes of 2004 AGM at ISCAS 2004

The minutes of the 2004 AGM were endorsed unanimously by the Committee.

Review of Technical Activities in 2004

Bertram Shi reviewed the technical activities of the committee over 2004.

IEEE Transactions on Circuits and Systems-I: Regular Papers: Special Issue on "CNN Technology and Active Wave Computing". Guest Editors: Bertram Shi, Paolo Arena and Akos Zarandy. The paper submission deadline was 31st July 2003. Final decisions were made on which papers to accept to the special issue by January 2004. Fifteen papers were included in the special issue (May 2004). The special issue is separated into three sections that highlight several trends that have emerged in recent years. The sections are entitled "Single-layer arrays," "Multi-layer arrays" and "Emerging Technologies." Each section contains five papers, which are a mix of theory, application, design and implementation, consistent with the broad multidisciplinary scope of CNN research.

ISCAS 2004: Three special sessions were organized by Technical Committee members: "Silicon Implementations of CNN and Programmable Mixed-Signal Vision I," "Silicon Implementations of CNN and Programmable Mixed-Signal Vision II," and "Bionics and Theory of Cellular Neural Networks."
The Chair of the CNNAC technical committee, Bertram Shi, served as chair for the CNNAC track at ISCAS. Technical committee members Paolo Arena, Marco Gilli, Ari Paasio, Csaba Reckezcky and Ronald Tetzlaff served as review committee members.

CNNA 2004: The 8th IEEE International Workshop on Cellular Neural Networks and Their Applications (CNNA 2004) was held in Budapest, Hungary on 22nd-24th July 2004. This workshop was organized by Tamas Roska, and took place the week before the International Joint Conference on Neural Networks, which was also held in Budapest. The regular technical program was organized by Bertram Shi and Akos Zarandy, with special sessions organized by Marco Gilli The final program was single track to encourage multidisciplinary interaction. It included three plenary talks on nanoelectronic devices and circuits, resonant tunneling diode based CNNs and retinal modeling, two panel

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discussions on vision in CNN technology and physical implementations, as well as 75 papers organized into regular and special sessions.

NCSP 2004: The TC provided technical sponsorship for the 2004 RISP International Workshop on Nonlinear Circuits and Signal Processing (NCSP'04) which was held at the Waikiki Beach Marriott Resort, Honolulu, Hawaii, USA (Mar. 5th-7th, 2004).

ISCAS 2005: The technical committee was involved in the organization of the International Symposium on Circuits and Systems (ISCAS 2005) in Kobe, Japan. Technical committee members organized two CNNAC oriented special sessions, entitled "Bionics and biomedical applications" (organized by Ronald Tetzlaff and Johann Wolfgang) and "Design and application of topographic sensory microprocessors" (organized by Gustavo Linan Cembrano).

Leon Chua, who was the recipient of the IEEE Gustav Robert Kirchhoff Award, gave a plenary invited Lecture, entitled "Local activity and emergent computation" on the 24th of May.

This year, there were 31 submissions to the track, a decrease with respect to the 47 submissions in 2004 (but a substantial increase from the 10 submissions in 2003). The committee organized the review process for the CNNAC track. Bertram Shi and Mamoru Tanaka served as the track chairs. The review committee consisted of Paolo Arena, Ari Paasio, Marco Gilli, Gustavo Linan, Csaba Rekeczky, Mamoru Tanaka, and Ronald Tetzlaff.

For ISCAS 2005, the sub-tracks of the CNNAC track were:
4.0: Cellular Neural Networks and Array Computing
4.1: Theory of cellular nonlinear spatio-temporal phenomena
4.2: Analog-logic spatio-temporal algorithms
4.3: Learning and design
4.4: Implementations of topographic microprocessors
4.5: Bio-inspired/neuromorphic arrays
4.6: Integrated sensor/processor/actuator arrays
4.7: Spatio-temporal models of biological information processing
4.8: Applications
4.9: Other areas in Cellular Neural Networks and Array Computing

Given the importance of clear sub-track listings in attracting quality papers to the track, Bert Shi asked committee members for the feedback for any changes in the sub-track titles for 2006.

Review of Technical Activities in 2005 and Upcoming Conferences

NCSP 2005: The TC provided technical sponsorship for the 2005 RISP International Workshop on Nonlinear Circuits and Signal Processing (NCSP'05) which was held at Honolulu, Hawaii, USA (Mar. 4th-6th, 2004). CNNAC TC members Mamoru Tanaka and Yoshifumi Nishio served as General Vice-Chair and Technical Program Secretary.

SPIE CONFERENCE ON MICROTECHNOLOGIES FOR THE NEW MILLENNIUM (Bioengineered and Bioinspired Systems). The conference, was held in Seville (Spain) from the 9th to the 11th of May, before ISCAS and included one regular session devoted to CNNs. Conference Chairs were Riccardo Carmona and Gustavo Linan Cembrano. Five TC members also served on the program committee for this conference.

CNNA 2005: The theme of the next 9th CNNA is "Brain-Like Sensory Computing for Consumer Electronics." The conference will be held during May 28th-30th, 2005 at the Lakeshore Hotel in Hsinchu (Taiwan) after the ISCAS 2005 in Kobe. This conference is significant in two ways. First, it represents a transition from the bi-annual timing of the CNNA Workshops followed in the past to an annual scheduling. Second, it is the first CNNA Workshop held outside of Europe in the history of the CNNA Workshop. In addition to regular and special sessions, this conference will feature one keynote talk, four plenary talks, two panel discussions and a live demo session. This Conference will be

chaired by Prof. Zen Chen. The technical program was organized by Prof. Chin-Teng Lin, Dr. Csaba Rekeczky and Prof. J. F Yang.

9th *WSEAS INTERNATIONAL CONFERENCE ON SYSTEMS*: Technical committee members V. Mladenov and A. Slavova are organizing a workshop on "Cellular Neural Networks: Theory and Applications." The Conference will be held as part of the 9th International Conference on Circuits, Systems, Communications and Computers (CSCC) in Athens, Greece between July 11th-13th, 2005.

7th *WSEAS INTERNATIONAL CONFERENCE ON MATHEMATICAL METHODS AND COMPUTATIONAL TECHNIQUES IN ELECTRICAL ENGINEERING (MMACTEE 2005)*: Technical committee members Valeri Mladenov and Angela Slavova are organizing a workshop on "Cellular Neural Networks: Theory and Applications." The Conference will be held between October 27th-29th in Sofia, Bulgaria.

Upcoming Special Issues in Journals

INTERNATIONAL JOURNAL OF CIRCUIT THEORY AND APPLICATIONS: Three members of the Technical Committee (Guest Editor: Tamás Roska, Guest Coeditors: Paolo Arena, Csaba Rekeczky) are organizing a special issue on "CNN Technology: Wave algorithms, Bio-relevance and Applications" in the International Journal on Circuit Theory and Application. This special issue is scheduled to appear as the last issue of 2005 or the first issue of 2006. The manuscript submission deadline is the 31st of May 2005.

IEEE CAS MAGAZINE: Akos Zarandy reported that the second issue of the year 2005 will be devoted to CNN Technology and will host three key papers on CNNs. They are entitled: "Cellular wave computers for brain-like spatial-temporal sensory computing, "by T. Roska; "New horizon for CNN: with fuzzy paradigms for multimedia, "by Chin-Teng Lin; Chun-Lung Chang; Jen-Feng Chung; "Bi-i: a standalone ultra high speed cellular vision system," by A. Zarandy, and C. Rekeczky.

10th *IEEE International Workshop on Cellular neural Networks and their Applications (CNNA'06)*

According to the decisions taken in the previous AGM, the next 10th International workshop on "Cellular Neural Networks and their Application" will be held in Istanbul (Turkey) from the 28th to the 30th of August, 2006. Vedat Tavsanoglu, who will be the General Chair, gave a brief illustration of the Conference organization. Sabri Arik will be the Program Chair. The deadline for paper submission will be the middle of May and notification of acceptance/rejection will be sent to authors within the middle of June. In addition, the submission of Lives demo proposals will be encouraged. The WEB site of the conference is under construction and will be ready soon. Vedat Tavsanoglu also proposed to organize a Student Contest, based on both paper and problem solving competition. It was agreed that the same Committee that organized the contest in Frankfurt and Budapest (chaired by Csaba Rekeczky) will investigate the possibility of organizing a contest for CNNA 2006.

Initiative in "Advances in Circuits and Systems"

As the member already know from the previous AGM, this initiative will lead to a quarterly, in the IEEE Circuit and Systems Society, distributed newsletter giving developments of general interests. The committee approved by the previous AGM, for handling TC contributions is composed by Ronald Tetzlaff (Theory) , Csaba Rekeczky (Applications) and Ricardo Carmona (Implementation).

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Special sessions and tutorial proposals

The new chair, Ronald Tetzlaff will be responsible for organizing special sessions and tutorials endorsed by the TC at ISCAS 2006.
Following the successful tutorial on "CNN Technology" given by Csaba Rekeczky and Akos Zarandy at IJCNN 2004, in Budapest, it was proposed that a similar CNN tutorial be submitted to ISCAS 2006.

New officers

Following the decision taken in Vancouver, Ronald Tetzlaff's term as new Chair will begin after ISCAS 2005. Marco Gilli will continue to serve as the Secretary of the Committee.

Call for awards and DLP nominations

The new Chair, Ronald Tetzlaff will have the responsibility to nominate distinguished lecturers for the CAS DLP program and to ensure that top papers in the area of CNNAC are brought to the attention of the CAS awards committees. Bert Shi asked members to submit nominations for distinguished lecturers and possible award papers to Ronald by the end of November. Ronald would issue a reminder to the TC via email.

AOB

Bertram Shi reported that a special issue on the Transactions on Circuits and Systems - Part I is scheduled, based on the best papers presented at ISCAS.
Tamas Roska reported that the "Biotechnologies Council" is going to propose a new "IEEE- Transactions on Bio Circuits and Systems." This Transactions could be of great interest for the CNNAC Technical Committee.
Since there was no further business, the meeting was adjourned.