

ANNUAL REPORT 2001 - DSP TC, IEEE CAS SOCIETY

Chairman: Prof. P.S.R. Diniz
Secretary: Prof. T. Saramäki
Past Chairman: Prof. Y.-C. Lim

- (1) TC Meeting: The Digital Signal Processing Technical Committee met from 12:20hr till 14:00hr on the 30th of June in the year 2000, in Mandarin room in International Hotel in Geneva during ISCAS 2000. Twelve members and three invited researchers attended the meeting to approve last year's minutes, report activities sponsored by the DSP Technical committee, report on-going Technical Committee activities and discuss future plan and activities. The members attending the meeting are Y.-C. Lim, P. S. R. Diniz, S.-C. Pei, T. Stouraitis, T. Hinamoto, T. Saramäki, M. Kawamata, Y. Miyanaga, M. Gabbouj, I. Pitas, P. P. Vaidyanathan, and W-S Lu. The invited researchers are S.C. Chan (on behalf of H. K. Kwan), K. Egiazarian, and H. Johnsson.
- (2) The following new members have been voted into the TC:
 - (a) Associate Professor Håkan Johansson, Division of Electronics Systems , Department of Electrical Engineering, Linköping University , SE-581 83 Linköping, Sweden, Tel: +46 (0)13 281676, Fax:+46 (0)13 139282, e:mail: hakanj@isy.liu.se
 - (b) Associate Professor Chan Shing-Chow, Department of Electrical and Electronic Engineering, The University of Hong Kong, Tel: (852) 28598025, Fax : (852) 25598738, e-mail: scchan@eee.hku.hk
 - (c) Profs. Edward J. Coyle, Richard J. Kozick, P.K. Rajan, Tariq S Durrani, and Daniel Graupe resigned from DSP TC in order to vacate positions for new members.
- (3) Conferences or workshops where the DSP TC or members of the TC was/were actively involved in 2000 include the followings:
 - (a) Prof. Y. C Lim was the DSP track chair for ISCAS 2000.
 - (b) EUSIPCO 2000 (European Signal Processing Conference X):The largest European conference on signal processing was held in Tampere, Finland, during 5-8.9.2000. The conference is an EURASIP (European Association for Signal Processing) conference which is held every two years.The conference attracted about 800 participants and 633 technical papers were presented. A total of 17 industrial exhibitors participated in the conference. The conference was co-chaired by Prof. Jaakko Astola and Profs. M. Gabbouj and T. Saramäki (both DSP TC members) have served as Technical Program Chair and Special Sessions Chair, respectively. Furthermore, Prof. Saramäki was also a co-chair of three special sessions.
 - (c) Balkan Conference on Signal Processing, Communications, Circuits and Systems <<http://www.ee.bilkent.edu.tr/BCSP/>> was held on Isik University Campus in Istanbul in June 2-3, 2000. Prof.A. Enis Cetin was the chairman of the conference. IEEE CAS Society Distinguished speakers Prof. Diniz and Prof. Yih-Fang Huang gave plenary talks in this conference. The conference was sponsored by IEEE Turkey Section and IEEE Turkey CAS Chapter. This is the first of a series of conferences. The next one will be held in 2002.
 - (d) Prof. Sankar Basu was the the General Chair of First IEEE International Conference on Multimedia and Expo (ICME) 2000, New York City, August 2000 jointly with Signal Processing (SP) Society, Computer Society (CS), the Communications Society (ComSoc) and Circuits and Systems Society (CAS). He is a member of the Steering Committee of ICME 2001,August 22-25, 2001,Waseda University, Tokyo, Japan.
 - (e) Prof. Sankar Basu was a co-chair of the special session entitled "n-D systems, statistical learning theory" at ISACS (the Independent Schools Association of the Central States) 2000 (see <http://www.isacs.org/>) and will be a co-chair of the special session entitled "n-D systems" at ISACS 2001. Futhermore, he is a member of the Technical Program Committee of ISCAS 2001.
 - (f) NORSIG 2000 was held in Norrkoping, Sweden, June 13-15 2000. NORSIG is a biennial IEEE Nordic Signal Processing Symposium that is devoted to all aspects of theory, design, implementation, and applications of signal processing. NORSIG 2000 was the fourth symposium and the first one to take place in Sweden. It attracted about 150 participants from some 20 countries

and 128 technical papers were presented. The conference was chaired by Prof. L. Wanhammar and co-chaired by Ass. Prof. H. Johansson.

- (g) Prof. Thanos Stouraitis was a member of the Technical Program and Steering Committees of IEEE CASS-supported ICECS 2000, Beirut, Lebanon, Dec, 2000. There were about 250 attendees. The organization was very successful. There were altogether submissions from about 55 countries. 41 Program Committee Members performed the review and 276 contributions were selected for presentation in a total of 47 lecture or poster sessions. Three plenary talks and 4 tutorial sessions were given.
 - (h) Profs. M. Kawamata and Y. Miyanaga (both DSP TC members) were the General Chair and the Technical Program Chair of ISPACS 2000 (The 2000 IEEE International Symposium on Intelligent Signal Processing and Communication Systems), respectively, Sheraton Waikiki Hotel, Honolulu, Hawaii, USA, November 5-8 2000. This conference was arranged in conjunction with the 2000 International Symposium on Information Theory and Its Applications (ISITA 2000). ISPACS 2000 included many regular sessions and some special sessions on emerging intelligent signal processing and communication systems.
 - (i) Prof. Yih-Fang Huang was the Technical Program Chair of IEEE Asian-Pacific Conference on Circuits and Systems, Tianjin, China, December 4-6, 2000.
 - (j) Prof. Joseph B. Evans was the Chairman of the 2000 IEEE Gigabit Networking Workshop (GBN 2000) held in Tel Aviv, Israel in March 2000. GBN is sponsored by the IEEE Communications Society Technical Committee on Gigabit Networking and is traditionally concurrently with Infocom.
- (4) On going activities:
- (a) NSIP 2001: The 2001 Nonlinear Signal and Image Processing (NSIP) workshop is scheduled to be held in the Inner Harbor of Baltimore Maryland, June 3-6, 2001. The workshop is jointly sponsored by the IEEE and EURASIP (European Association for Signal Processing). The DSP TC serves as a sponsor of the workshop, which is held every two years. The workshop attracted over 200 papers submissions, and it is expected that there will be approximately 180 technical papers presented. The workshop is being co-chaired by Profs. Kenneth Barner and Gonzalo Arce. Other DSP TC members involved in the workshop include Prof. Moncef Gabbouj who serves as the Publicity Chair. Additional information on NSIP-01 can be found at: <http://www.ece.udel.edu/NSIP>.
 - (b) Prof. Y. Miyanaga is a member the Steering Committee of ASP-DAC (Asia and South Pacific, Design Automation Conference 2001) to be held in Pacifico Yokohama, Yokohama, Japan, January 30 – February 2, 2001. It is sponsored by IEEE Circuits and Systems and IEICE. The goal of the conference is to provide a forum for presentations, discussions, and observations of the state-of-the-art of Design Automation (DA) technologies and design methodologies of electronic systems.
 - (c) Prof. T. Saramäki is a Co-Chairman together with Profs. Karen Egiazarian and Jaakko Astola of the 2001 International Workshop on Spectral Methods and Multirate Signal Processing (SMMSP 2001) to be held in Pula, Croatia, June 16-18. See <http://sigwww.dmi.tut.fi/TICSP/SMMSP2001/>. The main purpose of the workshop is to bring together some of the leading experts working on transforms, filter banks, and multirate filtering in general and to create a friendly and relaxed atmosphere to talk about the most important issues in these fields.
 - (d) Prof. Joseph B. Evans the Co-Chairman of the 2001 IEEE Gigabit Networking Workshop (GBN 2001) in Anchorage, Alaska, to be held in late April.
- (5) Some of the activities of the TC's members are listed below:
- (a) Books:
 - (i) P. S. R. Diniz, E. A. B. da Silva, and S. L. Netto, "DIGITAL SIGNAL PROCESSING: System Analysis and Design," Cambridge University Press, New York, NY, 2001.
 - (ii) L. J. Karam, "Lossless Coding," Book Chapter in the Handbook of Image and Video Processing, edited by A. Bovik, Academic Press, 2000.
 - (b) Short courses:
 - (i) Prof. P.S.R. Diniz offered a short course on "Wireless Communications Technology" at Universidad Nacional del Sur, Argentina. Two weeks in October 2000. Distinguished lecturer activity.

- (ii) Prof. Saramäki has been since 1995 the main lecturer and organizer of four intensive DSP courses to the industrial people through EDUTECH, the institute of Tampere University of Technology taking care of educating people outside the university.
- (c) Plenary session, keynote speakers, invited lectures:
 - (i) Prof. P. S. R. Diniz gave an opening plenary talk entitled "Adaptive filtering in wireless communications," at the First IEEE Balkan Conf. on Signal Processing, Communications, Circuits, and Systems, Istanbul, Turkey, June 1-3, 2000. Distinguished lecturer activity.
 - (ii) Prof. Yih-Fang Huang gave a plenary talk entitled "Nonlinear MMSE multistage interference cancellation with set-membership filtering," at the First IEEE Balkan Conf. on Signal Processing, Communications, Circuits, and Systems, Istanbul, Turkey, June 1-3, 2000.
 - (iii) Prof. Yih-Fang Huang gave two invited lectures entitled "Adaptive set-membership filtering - Equalization and MAI mitigation" at the first IEEE South-American Workshop on Circuits and System (SAWCAS'2000), Rio de Janeiro, Brazil, November 20-22, 2000, Bahia Blanka, Argentina, November 22-24, 2000.
 - (iv) Prof. T. Saramäki gave two invited lectures entitled "Efficient DSP algorithms and their optimization for practical applications as well as for VLSI and signal processor implementations" at the first IEEE South-American Workshop on Circuits and Systems (SAWCAS'2000), Rio de Janeiro, Brazil, November 20-22, 2000, Bahia Blanka, Argentina, November 22-24, 2000.
 - (v) Prof. Sankar Basu was a keynote speaker at the Second International Workshop on n-D systems (NDS), July 2000, Czochka Castle, Poland.
 - (vi) Prof. Thanos Stouraitis gave an invited talk entitled "The impact of arithmetic on the chip power consumption" at NORCHIP 2000, organized in Turku, Finland, in Nov. 2000.
- (d) Editorial and IEEE services:
 - (i) Prof. L.J. Karam - Associate Editor, IEEE Transactions on Image Processing.
 - (ii) Prof. J.B. Evans - Associate Editor, IEEE Communications Letters.
 - (iii) Prof. J.B. Evans - Vice Chair, IEEE Communications Society Technical Committee on Gigabit Networking.
 - (iv) Prof. P.S.R. Diniz - Associate Editor, IEEE Transactions on Signal Processing.
 - (v) Prof. Y.C. Lim - Associate Editor, IEEE Transactions on Circuits and Systems II.
 - (vi) Prof. T. Stouraitis - Associate Editor, IEEE Transactions on Circuits and Systems I.
 - (vii) Prof. T. Stouraitis - Associate Editor, IEEE Transactions on Circuits and Systems II.
 - (viii) Prof. T. Stouraitis - Associate Editor, IEEE Transactions on VLSI.
 - (ix) Prof. T. Stouraitis - Regional Editor-Europe, Journal of Circuits, Systems, and Computers.
 - (x) Prof. T. Saramäki, - Associate Editor, IEEE Transactions on Circuits and Systems II.
 - (xi) Prof. A. Enis Cetin, - Associate Editor, IEEE Transactions on Image Processing.
 - (xii) Prof. Sankar Basu, - Associate Editor, IEEE Transactions on Circuits and Systems II.
 - (xiii) Prof. Sankar Basu, Guest Editor: Special issue of the IEEE Transactions on Multimedia on multimedia retrieval to appear in 2002; Special issue of the IEEE Transactions on Circuits and Systems I on multidimensional signals and systems to appear in 2002; and Special issue of the Journal of VLSI Signal Processing for image and video processing to appear in 2002.
 - (xiv) Prof. Sankar Basu, Editorial Board Member: Journal of Multidimensional Systems and Signal Processing, Kluwer Academic Publishers, appointed 2000, and Applied Signal Processing, European Signal Processing Association, appointed 2000.
 - (xv) Prof. Y. Miyanaga, - Editor, IEICE Transactions on Fundamentals, Special Issue on Noise Cancellation and Reduction Techniques.
 - (xvi) Ass. Prof. H. Johansson, - Associate Editor, IEEE Transactions on Circuits and Systems II.
 - (xvii) Prof. Yih-Fang Huang, - Treasurer, Steering Committee, IEEE Transactions on Multimedia.
- (e) Tampere International Center for Signal Processing (TICSP), Tampere University of Technology: The Center has acquired the status of Center of Excellence given by the Academy of Finland 2000-2005. The Director for TICSP is Prof. Jaakko Astola. Two of the DSP TC members, Prof. Moncef Gabbouj and Prof. Tapio Saramäki, are heavily involved in arranging the activities of TICSP. Prof. Moncef and Prof. Tapio Saramäki are the Team leaders in SPAG (Signal Processing Algorithm Group). Several TC members (Profs. Pitas, Bellanger, Gabbouj and Nguyen) are members of the Advisory Board of TICSP. TICSP is an institute created to provide a proper environment for a rapid transfer of the latest ideas between first-class researchers in industry and academia. Its purpose is to

provide a proper logistic, financial and human resource environment to adequately host exchanges of highly competent researchers. TICSP invites for periods of 2 to 12 months researchers at all levels: visiting professors, post-doctorate, and Ph.D. students, to engage research at the Signal Processing Laboratory in cooperation with the researchers of the neighboring academic and industrial research institutes. The main purpose is to generate fruitful cooperation between scientists all around the world. Part of the activities of TICSP is organizing workshops. It has also its own publication series to appear twice a year. For more information, visit the homepage at URL: <http://sigwww.cs.tut.fi/TICSP/>.

- (f) A research laboratory in Image, Video, and Usability (IVU) (<http://www.eas.asu.edu/~image>) has been established in the Telecommunications Research Center at Arizona State University. Prof. L.J. Karam is the person in charge.
 - (g) Prof. Thanos Stouraitis directs the newly established International multidisciplinary Graduate Program on "Signal and Image Processing." The Program is based since 1998 in the Univ. of Patras, Patras, Greece. Offers a diverse program of about 15 courses and students graduate after they complete a research thesis. They are aggressively sought after by international industry. More info can be found at <http://www.upatras.gr/dsp/>.
- (6) Some good news from the TC members are listed below:
- (a) Prof. P.S.R. Diniz, Y. C. Lim and Prof. Y.F. Huang were elected Distinguished Lecturer for the CAS society for the year 2001.
 - (b) Prof. Yih-Fang Huang received the CAS Golden Jubilee Medal.
- (7) The DSP Technical committee will meet again on the 8th of May, Tuesday, from 12:00 to 14:00 at a meeting room at the Parkroyal Hotel at Darling Harbour (also ISCAS headquarter hotel), very close to the Convention Center.