

IEEE CIRCUITS AND SYSTEMS SOCIETY

TECHNICAL COMMITTEE ON CELLULAR NANOSCALE NETWORKS AND ARRAY COMPUTING (CNNAC)

ANNUAL REPORT 2016

MEMBERS



Akio Ushida



Horvath Andras



Müştak Yalçın



Akos Zarandy



Hyongsuk Kim



Nagy Zoltan



Angel Rodriguez-Vazquez



Johan Suykens



Nerhun Yildiz



Angela Slavova



Joos Vandewalle



Arena, Paolo



Ari Paasio



Jorge Fernández Berni



Pier Paolo Civalleri



Arpad Csurgay



Josef Nossek



Piotr Dudek



Bertram Shi



Lambert Spaanenburg



Ricardo Carmona Galán



Chai Wah Wu



Leon O. Chua



Ronald Tetzlaff



Chin-Teng Lin



Luigi Fortuna



Sabri Arik



Chung-Yu Wu



Maciej Ogorzalek



Szolgay Peter



Csaba Rekeczky



Mamoru Tanaka



Valeri Mladenov



David Lopez Vilarino



Marco Gilli



Vedat Tavşanoğlu



Eduardo Gomez



Mauro Di Marco



Victor M.Brea Sánchez



Fernando Corinto



Michael Niemier



Wolfgang Porod



Gert Cauwenberghs



Mika Laiho



Xavier Vilasis Cardona

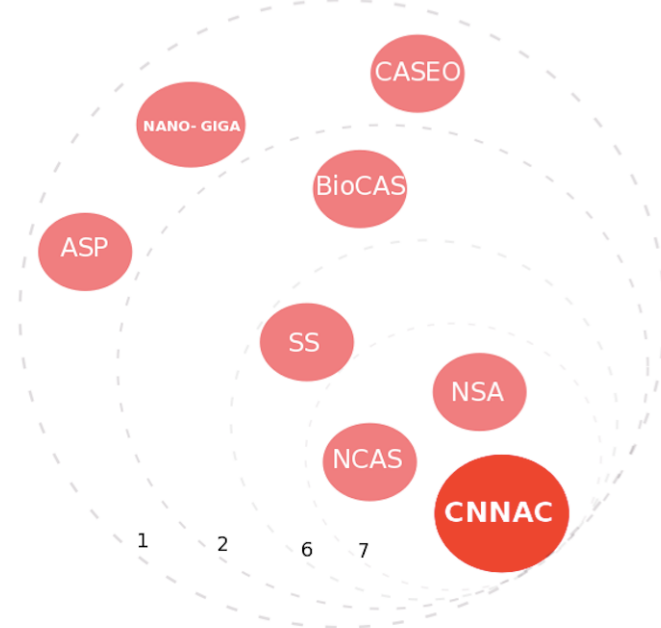
Chair : Mustak E. Yalcin

Chair-elect : Fernando Corinto

MATRIX OF INTERACTION

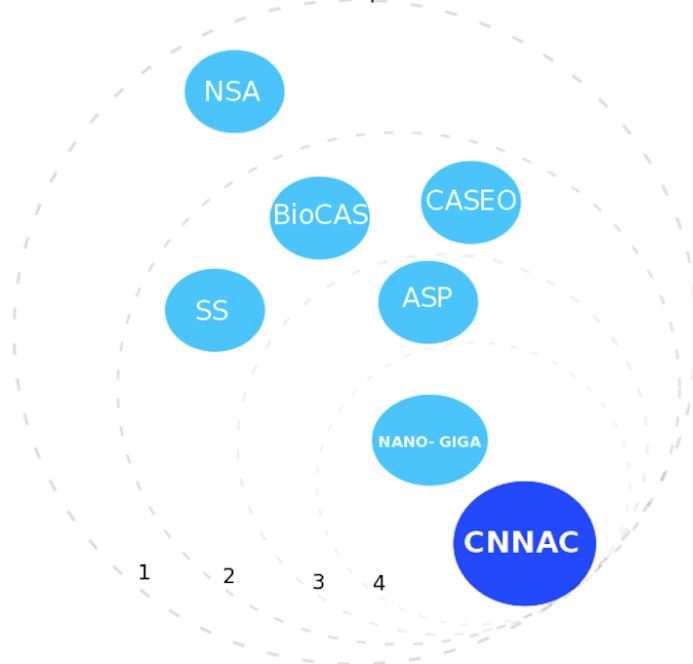
First figure shows that the number of our members who are also currently members of other TC. Our TC members are mostly cooperating with NCAS, NSA and SS TCs.

members who are also members of other TCs



Following figure shows our members wish to cooperate with which TCs. NANO-GIGA is the most wanted to cooperate.

members who would like to cooperate with other TCs



CONFERENCES/WORKSHOPS WHERE THE MEMBERS OF THE TC WERE ACTIVELY INVOLVED

- The IEEE International Symposium on Circuits and Systems (ISCAS) in Lisbon, Portugal, from May 24 to 27, 2015.
 - Industrial & Exhibition Co-Chairs: Angel Rodriguez-Vázquez (CNNAC TC Member)
 - SPECIAL SESSION: “Cellular Neural/Nonlinear Networks in the 21st Century”, Chair: Maciej Ogorzalek (CNNAC TC Member) and Akos Zarandy (CNNAC TC Member)
 - SPECIAL SESSION: “Memristor-based Cellular Nanoscale Networks: Theory, Design, and Applications”, Co-Chair: Fernando Corinto (CNNAC TC Member)
 - Session : “Cellular Nanoscale Networks”, Chair: Mustak Yalcin (CNNAC TC Member)
- The 22nd European conference on circuit theory and design, ECCTD2015 2015 in Trondheim, Norway from 24th to 26th August,
 - CNNAC TC Members in ECCTD2015 Scientific Committee:
 - Arpad Csurgay, Technical University of Budapest, Hungary
 - Csaba Rekeczky, Hungarian Academy of Sciences, Hungary
 - Joos P. Vandewalle, Katholieke Universiteit Leuven, Belgium
 - Josef Nossek, Munich University of Technology, Germany
 - Leon O. Chua, University of California at Berkeley, USA
 - Luigi Fortuna, Università di Catania, Italy
 - Maciej Ogorzalek, AGH University of Science and Technology, Krakow, Poland
 - Paolo Arena, Università di Catania, Italy
 - Pier Civalleri, Politecnico di Torino, Italy
 - Ronald Tetzlaff, Technische Universität Dresden, Germany
 - Vedat Tavsanoglu, Yildiz Technical University, Istanbul, Turkey
 - Wolfgang Porod, University of Notre Dame, USA
 - Opening Session: “Complexity in future electronic systems”, by Ronald Tetzlaff (CNNAC TC Member)
 - Special Session: “New Trends in the Theory and Applications of Cellular Nonlinear/ Nanoscale Networks,” Chair: Angela Slavova (CNNAC TC Member)
- The International Conference on Distributed Smart Cameras (ICDSC 2015) in-cooperation with ACM SIGBED, Hotel NH-Collection, Sevilla (Spain), September 8-11, 2015.
 - General Chair: Ricardo Carmona-Galán (CNNAC TC Member) and Ángel Rodríguez-Vázquez (CNNAC TC Member)
 - Technical Program Committee Member : Víctor Brea, (CNNAC TC Member)
 - PhD Forum Chair: Víctor Brea, (CNNAC TC Member)
 - Technical Program Committee Chair: Jorge Fernández-Berni, (CNNAC TC Member)
- 1st Workshop on Advancements on Circuits and Imaging (ACI 2015), University of Oxford, UK, September 28-29, 2015.
 - Invited talk: "Efficient Feature Extraction in CMOS Vision Sensors", by Ricardo Carmona-Galán (CNNAC TC Member)
- Workshop on Architecture of Smart Camera (WASC 2015), CiTIUS (Research Center on Information Technologies) Universidade de Santiago de Compostela, Spain, June 29-30, 2015.
 - local co-organizer: Víctor Brea, (CNNAC TC Member)
 - advisory board member: Ricardo Carmona-Galán (CNNAC TC Member)
 - invited talk : “Assessment of circuit non-idealities’ effect on algorithm performance via OpenCV modeling”, Ricardo Carmona-Galán (CNNAC TC Member)

- The 7th International Scientific Conference on Physics and Control, 19-22 August, 2015, Istanbul, Turkey
 - Chair : Mustak E. Yalcin (CNNAC TC Member)
 - International Program Committee : Luigi. Fortuna (CNNAC TC Member)
- the 2nd European Symposium on Intelligent Materials on 12th June 2015 in Kiel, Germany, from 10th to 12th June 2015
 - Keynote lecture: “Recent Results in the Theory of Memristive Nanodevices”, by Ronald Tetzlaff (CNNAC TC Member)
- BrainLinks-BrainTools on 10th July 2015 in Freiburg im Breisgau, Germany
 - Invited lecture: “Seizure Prediction in Epilepsy: The Feature Extraction Problem”, by Ronald Tetzlaff (CNNAC TC Member)
- the 10th SICC International Tutorial Workshop “Topics in Nonlinear Dynamics” on 07th September 2015 in Torino, Italy, from 07th to 09th September 2015
 - Invited lecture : ‘Fading memory of non-volatile memristors?’ by Ronald Tetzlaff (CNNAC TC Member)

EDITORIAL SERVICE

- International Journal of Circuit Theory and Applications, Wiley
 - Editor in Chief : Á. Rodríguez-Vázquez (CNNAC TC Member)
 - Editors from our TC:
 - Ronald Tetzlaff (CNNAC TC Member)
 - Fernando Corinto (CNNAC TC Member)
 - Peter Szolgay (CNNAC TC Member)
 - M. J. Ogorzalek (CNNAC TC Member)
 - Editorial Board Member form our TC:
 - Joos Vandewalle (CNNAC TC Member)
 - Casaba Rekeczky (CNNAC TC Member)
 - Special issue Editors:”Quantum circuits”
 - Ál Csurgay (CNNAC TC Member)
 - PP Civaleri (CNNAC TC Member)
 - W Porod (CNNAC TC Member)
- International Journal of Bifurcation and Chaos (IJBC), World Scientific
 - Honorary Editor-in-Chief : Leon Chua (CNNAC TC Member)
 - Associate Editors : Mustak E. Yalcin (CNNAC TC Member)
 - Honorary Editorial Board Members form our TC:
 - Marco Gilli (CNNAC TC Member)
 - M. J. Ogorzalek (CNNAC TC Member)
- IEEE Nanotechnology Express (ENANO), IEEE
 - Editor-in-Chief : Wolfgang Porod (CNNAC TC Member)
- AEÜ – International Journal of Electronics and Communications, Elsevier
 - Editorial Board Member : Ronald Tetzlaff (CNNAC TC Member)
- IEEE Transactions on Circuits and Systems Part II – Express Briefs, IEEE
 - Associate Editor :
 - Ronald Tetzlaff (CNNAC TC Member)
 - Piotr Dudek (CNNAC TC Member)
- Journal of Real-Time Image Processing, Springer
 - Associate Editor : Ricardo Carmona-Galán (CNNAC TC Member)
 - Guest Editors: Ricardo Carmona-Galán (CNNAC TC Member)

- [The IEEE Circuits and Systems Magazine, IEEE](#)
 - Editor in Chief : [Dr. Chai Wah Wu \(CNNAC TC Member\)](#)
- [International Journal of Neural Networks and Applications, Serials](#)
 - Editor in Chief : [Angela Slavova \(CNNAC TC Member\)](#)
- [Pliska Studia Mathematica Bulgarica , Bulgarian Academy of Sciences.](#)
 - Guest Chief : [Angela Slavova \(CNNAC TC Member\)](#)

PUBLICATIONS OR THE MEMBERS

Member's publication list can be access by Google Scholar link. For the period of annual report, the number of publication and where the publications are published are given in this report. Furthermore, the most related publication of each member are given.

Arena, Paolo -(8 journal and Conf. pub.) – [Google Scholar](#)- [Robots and Lattice Automata, International Journal of Advanced Robotic Systems, Desalination and Water Treatment, Neural Networks, Journal of the Franklin Institute, International Journal of Neural Systems]

[Modelling the insect Mushroom Bodies: Application to sequence learning](#)

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Arik, Sabri -(7 journal and Conf. pub.) – [Google Scholar](#) – [Neurocomputing, Neural Information Processing, International Journal of Systems Science, Fuzzy Sets and Systems]

[Delay-dependent stability criteria of uncertain Markovian jump neural networks with discrete interval and distributed time-varying delays](#)

MS Ali, S Arik, R Saravanakumar
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Berni, Jorge Fernández -(8 journal and Conf. pub) - [Google Scholar](#)- [IS&T/SPIE Electronic Imaging, International Journal of Circuit Theory and Applications, Image Feature Detectors and Descriptors]

[Bottom-up performance analysis of focal-plane mixed-signal hardware for Viola–Jones early vision tasks](#)

J Fernández-Berni, R Carmona-Galán, R Río, A Rodríguez-Vázquez
International Journal of Circuit Theory and Applications 43 (8), 1063-1079

Cardona, Xavier Vilasis -(20 journal and Conf. pub) - [Google Scholar](#) [Physical Review D, Physical review letters, Journal of High Energy Physics, American Physical Society, Journal of Instrumentation]

[Use of GPUs in the LHCb trigger](#)

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M Bonnin, F Corinto, V Lanza

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[A computational model for label-free detection of non-fluorescent biochromophores by stimulated emission](#)

Á Fekete, Ál Csurgay

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[Floquet multipliers of a metastable rotating wave in a Chua–Yang ring network](#)

M Di Marco, M Forti, BM Garay, M Koller, L Pancioni

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Dudek, Piotr -(6 journal and Conf. pub)- [Google Scholar](#) [Springer Handbook of Computational Intelligence, Circuits and Systems I: Regular Papers, IEEE Transactions on]

[Trigger-Wave Asynchronous Cellular Logic Array for Fast Binary Image Processing](#)

P Mrozczyk, P Dudek

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Fortuna, Luigi -(43 journal and Conf. pub)- [Google Scholar](#) [CYBERNETICS AND PHYSICS, Robotics and Autonomous Systems, Circuits and Systems I: Regular Papers, IEEE Transactions, Communications in Nonlinear Science and Numerical Simulation, Advances in Neural Networks: Computational and Theoretical Issues, International Journal of Bifurcation and Chaos, EPL (Europhysics Letters), Robotics and Autonomous Systems, Pattern Recognition Letters, Physical Review E, Journal of the Franklin Institute]

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JD Wichard, MJ Ogorzalek, C Merkwirth

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Paasio, Ari -(4 journal and Conf. pub) -[Google Scholar](#) [Sixth International Conference on Graphic and Image Processing, Medical Measurements and Applications]

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Suykens, Johan -(53 journal and Conf. pub)- [Google Scholar](#) [Signal Processing, Big Data: Algorithms, Analytics, and Applications, Springer Handbook of Computational Intelligence, Journal of Machine Learning Research, Neurocomputing, Journal of Process Control, Complex Systems and Networks]

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[Synchronization in Directed Complex Networks Using Graph Comparison Tools](#)
H Liu, M Cao, CW Wu, JA Lu, CK Tse
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N Yildiz, E Cesur, K Kayaer, V Tavsanoglu, M Alpay
Circuits and Systems I: Regular Papers, IEEE Transactions on 62 (1), 130-138

Zarandy, Akos -(8 journal and Conf. pub) - [Google Scholar](#) [Journal of Sensors, Journal of Infrared, Millimeter, and Terahertz Waves, Unmanned Aircraft Systems]

[Cellular sensor-processor array based visual collision warning sensor](#)

NOMINATIONS

The CNNAC TC endorsed;

Dr. Vedat Tavsanoglu

and

Dr. Mattia Frasca

for the CASS Distinguished Lecturer Program (DLP),

Dr. Victor Brea Victor

and

Dr. Mattia Frasca

for Senior Editorial Board Members of The IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS) in the annual report period.