

Meeting minutes
from the Technical Committee meeting
at ISCAS 2020 on the 12nd October 2020

Attendees:

András Horváth
Alon Ascoli
Angela Slavova
Kristóf Karacs
Ronald Tetzlaff
Maide Bucolo
Mattia Frasca
Valeri Mladenov

The following topics were discussed during the meeting:

1. Summary of the IEEE CAS Society Technical Activities Division Meeting

- a) CASS covers a broad range of research areas, from circuit theory to algorithm development and design implementation. Many real-world challenges can be more efficiently addressed by multidisciplinary and interdisciplinary collaboration.
- 2) There is a well-known gap between industry and academia. The industry cares a lot about the integration of technologies, that can help solve real problems. Academic researchers often care about the technology itself, regardless of the applications.
- 3) We need to provide valuable technical activities to our unique interdisciplinary community of members to promote community-centric professional growth. This will allow CASS to stay ahead of other IEEE Societies and to expand its expertise to new research areas and applications

2. Paper submission Trends at ISCAS

The number of Cellular Nonlinear Networks-related papers has been decreasing over the past few years. Meanwhile, the numbers of papers investigating Convolutional Neural Networks and Memristors have been increasing. Our community has to be more visible and possibly change the focus of the committee to increase the number of publications. This year 915 papers have been submitted to ISCAS. 35 of the 915 papers investigated memristors. 171 of the 915 papers dealt with Neural Networks. 39 among these 171 manuscripts contained the CNN keyword. But only 2 of these 39 manuscripts investigated Cellular Nonlinear Networks, while the others focused on Convolutional Neural Networks.

3. Strategies towards a sustainable future for the CNNA-TC

First, we should identify the reasons behind the lack of interest in research on Cellular Nonlinear Networks, and the consequent decreasing number of papers, related to topics of focus to our TC, at ISCAS. The following possible reasons were mentioned:

- Our committee is theory-focused, we should increase collaboration with the industry and be more application-oriented.
- cooperation efforts, with the establishment of synergies and the development of joint research projects, should be made.
- The focus and with this the name of the committee should/could also be changed. This way we could increase our visibility as well as attract and cooperate with more researchers from other TCs as well. The possible name change should be discussed in a dedicated TC meeting to be planned for next month. Meanwhile suggestions are expected from the committee members. Later on, during the

planned meeting, we could vote and select the most suitable new TC name. The new name should keep the focus of our research activities on Cellular Nonlinear Networks, but could involve also concepts related to Memristive Systems and Local Activity Theory.

4. Future conferences, which are typically of interest to our TC were mentioned, including ISCAS 2021 in South Korea (where a special session on *Edge Computing Applications with Memristor Technologies* is being organized by R. Tetzlaff, S.M. Kang, G.Ch. Sirakoulis, S. Menzel, and A. Ascoli) and CNNA 2021 in Catania.