

# Minutes of the Neural Systems and Applications Technical Committee (NSA TC)

## *2014 Annual Meeting*

*Location: Room 214, Melbourne Convention and Exhibition Centre*

Date: Tuesday, 3 June 2014

Time: 12:30 pm to 2:00 pm

## **1 Attendees**

- |     |                                       |                                |
|-----|---------------------------------------|--------------------------------|
| 1.  | Alejandro Linares Barranco            | alinares@us.es                 |
| 2.  | Shantanu Chakrabartty                 | shantanu@egr.msu.edu           |
| 3.  | Pamela Abshire                        | pabshire@umd.edu               |
| 4.  | Tobi Delbruck                         | tobi@ini.uzh.ch                |
| 5.  | Themis Prodromakis <sup>◇</sup>       | t.prodromakis@soton.ac.uk      |
| 6.  | Mitra Mirhassani <sup>◇</sup>         | mitramir@uwindsor.ca           |
| 7.  | Mounir Boukadoum                      | broukadoum.mounir@uqam.ca      |
| 8.  | Pei Wang                              | wangpei@henu.edu.cn            |
| 9.  | Shih-Chii Liu                         | shih@ini.uzh.ch                |
| 10. | Xiaoling Wang                         | xlwang1208@gmail.com           |
| 11. | Wenwu Yu                              | wenwuyu@gmail.com              |
| 12. | Jiajing Wu                            | jjajing.wu@connect.polyu.hk    |
| 13. | Chiara Bartolozzi                     | chiara.bartolozzi@iit.it       |
| 14. | Federico Corradi <sup>◇</sup>         | federico@ini.phys.ethz.ch      |
| 15. | Christian Mayr                        | cmayr@ini.uzh.ch               |
| 16. | Giacomo Indiveri                      | giacomo@ini.uzh.ch             |
| 17. | Piotr Dudek                           | p.dudek@manchester.ac.uk       |
| 18. | Yilda Irizarry-Valle <sup>◇</sup>     | yirizarr@usc.edu               |
| 19. | Bernabé Linares-Barranco <sup>◇</sup> | bernabe@imse-cnm.csic.es       |
| 20. | Wei Xing Zheng                        | w.zheng@uws.edu.au             |
| 21. | Elisabetta Chicca                     | chicca@cit-ec.uni-bielefeld.de |
| 22. | Franco Maloberti <sup>•</sup>         |                                |
| 23. | David Skellern <sup>•</sup>           |                                |

<sup>◇</sup> Candidate new members

<sup>◇</sup> Best paper award recipients

<sup>•</sup> CAS officers

## **2 Opening**

The chair, Alejandro Linares Barranco, welcomed the NSA TC members and opened the meeting. All attendees introduced themselves.

## **3 Introduction and approval of the meeting agenda**

Alejandro Linares Barranco introduced the agenda and the NSA TC unanimously approved the proposed agenda.

## **4 Approval of 2013 NSA TC meeting minutes**

The 2013 NSA TC meeting minutes were shared with the attendees by means of the committee's web page. No objections were received. The 2013 meeting minutes were approved unanimously.

## **5 New members**

1. Mitra Mirhassani (nominated by Mahid Ahmadi)
2. Themis Prodromakis (nominated by Alejandro Linares Barranco)
3. Bernabé Linares Barranco (nominated by Alejandro Linares Barranco)

The candidates were asked to leave the room and the chair called for any comments on the candidates. After a short discussion a vote was held for the NSA TC membership candidates listed above. All applicants were accepted as members of the NSA TC.

## **6 NSA TC Review by CASS**

The chair presented the list of CAS TC review committee members, the review schedule and a check list for the NSA TC.

All the points in the check list were discussed in the meeting and the CAS officers made comments on the committee's vision, mission and name. The NSA TC officers will produce a draft describing the vision and mission of the NSA TC, circulate it to all members and coordinate the discussion toward a new document defining the short and long term goals of the NSA TC. This draft will be included in the review questionnaire of the TC to be delivered in one month after this meeting.

## **7 NSA TC name and by-laws update approval**

Chair Alejandro Linares Barranco introduced the new NSA TC name proposals collected through email discussions with members previously to this meeting:

- Brain Emulation Systems and Applications TC (BESA TC)
- Brain Engineering Circuits and System TC (BECAS TC)
- Brain Emulation and Simulation Circuits and Systems TC (BESCAS TC)

The majority of members voted for changing the name but there was no agreement on the new name. All members agreed on creating a doodle vote after finalizing the vision document and collecting proposals from all members. It was also proposed to use the original name and replace applications with technologies.

Modifications of the by-laws including topic list, definition of active members and officers duties were also discussed and approved as follows.

### **7.1 Topic list**

The topic list was updated as follows.

1. Brain Reverse Engineering and Emulation Circuits and Systems.
2. Emerging neural computing and (Deep) learning.
3. Big data circuits.
4. Spiking Neural Network circuits and systems.

5. Large Scale Neuromorphic Systems.
6. Neural Network Circuits & Systems.
7. Other Areas in Brain Emulation Systems and Applications.

## 7.2 Active members

The definition of active members was updated as follows.

He/She helps in promoting and/or organizing TC activities (e.g. special sessions, special issues, workshops, brain storming, inter TC activities, web page, etc.) once every 5 years. He/she either attends the Annual Meeting at least once every 3 years or submits a write-up for inclusion in the Annual Report at least once every 3 years. Help with the paper review process (conference or related journals).

## 7.3 Officers duties

The TC officers must be active member and CAS member. They serve for a four year term: one year per role.

**Secretary Elect (1st year)** Elected by majority of present members in the annual meeting.

**Secretary (2nd year)** Treasurer, take care of web page, minutes of annual meeting, and collect, produce and send to BoG the annual report.

**Chair Elect (3rd year)** Responsible for ISCAS invited sessions, tutorials and short courses. Proposes DLP. Best paper award of the NSA Track.

**Chair (4th year)** interaction with CASS, annual meeting, recommend Associate Editors and Regional Representatives, serve as Track Chair, instruct chair elect and secretary.

A 2-years term was suggested during the TC review, but our current structure was approved.

## 8 New Web page

The old and simple website of the NSA TC is rigid and outdated by today's standards. A successful website is easy to fill with new content in a matter of minutes instead of hours and is updated by someone with little to no knowledge of the web-language (HTML/CSS). This allows for a constant stream of updated data and news on the website which guarantees more attractiveness for recurring visitors. All this is achieved by a content management system (CMS) - separation of design and content.

During the TC review video conference in March it was suggested to update the NSA TC and we were invited to make an outreach proposal to CASS for funding support. A new web page design has been conceived by the NSA TC officers and a professional web designer was involved to envision the implementation of the new web page. A funding request has been submitted to the IEEE-CAS for the new web-page design. Confirmation of financial support is expected in early June, release is planned within one months from this confirmation. In case of a negative response the NSA TC officers will evaluate alternative funding sources.

## 9 ISCAS 2014 paper statistics

The paper statistics were presented by the chair. Submission to our track are going down every year. The Cellular Neural Networks and Neural Systems and Applications are together in the same Track. In 2012 CNN was represented by one session of 5 papers. This year there were four submissions for CNN.

**2011** 62 submission / 30 accepted

**2012** 43 submission / 20 accepted

**2013** no records

**2014** 39 submission (5 SS) / 20 (5 SS) accepted

Our track was represented this year with 1 oral session, 1 oral special session and 2 poster sessions.

## **10 Annual report**

The annual report has been compiled with all data submitted by the NSA TC members and submitted to CAS. 22 NSA TC members contributed to the annual report, showing an increase of active members compared to last year (**Add number from last year!**).

The document is available on the TC web page.

## **11 Best paper award**

New procedure for selecting the best paper was presented. The chair elect is in charge of the evaluation process. He/she finds volunteers to rank the papers and distributed the selected papers to them. From 3 to 4 ranking per paper should be provided by the volunteer members. The authors of the paper with the highest score receives the best paper award, the honorary mention is given to the authors of the second best paper.

The award certificates were handed in to the the first authors of the two papers selected this year (see list of attendees in Sec. 1):

### **Best paper**

Paper number 2260: “Astrocyte on Neuronal Phase Synchrony in CMOS” Yilda Irizarry-Valle, Alice C. Parker, Ming Hsieh

### **Honorable mention**

Paper number 1735: “Mapping Arbitrary Mathematical Functions and Dynamical Systems to Neuro-morphic VLSI Circuit for Spike-based Neural Computation”. Federico Corradi, Chris Eliasmith, and Giacomo Indiveri

## **12 Officers for 2014-2015**

Elisabetta Chicca nominated Chiara Bartolozzi to be next secretary elect. The TC members were asked for further nomination but there was none. Chiara Bartolozzi left the room for the vote and she was accepted unanimously.

Shantanu Chakrabartty succeeded Alejandro Linares Barranco as Chair of the NSA TC. Elisabetta Chicca succeeded Shantanu Chakrabartty as Chair-Elect of the NSA TC. Wenwu Yu succeeded Elisabetta Chicca as Secretary of the NSA TC. Chiara Bartolozzi was elected for the Secretary-Elect position.

Alejandro Linares Barranco became Past-Chair of NSA TC.

## **13 Other business**

The following items were mentioned by Alejandro Linares Barranco:

- DLP accepts nominations until September.
- A confession session is planned for ISCAS 2015. This event should be promoted by all NSA TC members.
- TCs meeting: we have to nominate people for CAS awards.
- We have the opportunity to propose new CAS-FEST topics.

- ISCA's 2015 will be held in Lisbon (Portugal). The tutorials and special sessions deadline is Sept. 19, 2014; the papers deadline is Oct. 10, 2014.
- JETCAS is calling for Special Issue proposals: 3 GE with 15-20 papers each (15 final accepted only).

Shantanu Chakrabartty advertised a special issue of IEEE Transactions on Emerging Topics in Computing on "Advances in neuromorphic and analog VLSI computing". The deadline for paper submission has been extended to August 1, 2014. Chiara Bartolozzi advertised a research topic in Frontiers of Neuromorphic Engineering on "Synaptic plasticity for neuromorphic systems". The current deadline is July 1, 2014 but a deadline extension will be announced soon.