# 2021 Annual Report (June 2020 – May 2021) Circuits and Systems Education and Outreach Technical Committee IEEE Circuits and Systems Society

Chair: Lu Yu Secretary: Babak Ayazifar

### 1. Technical Committee Meeting(s):

(Please state the number of TC meetings in the past year, where held, TC meeting attendance rate, and was a quorum present.)

The Circuits and Systems Education and Outreach Technical Committee in the IEEE Circuits and Systems Society held one annual TC meeting online on Oct. 20, 2020. Twelve members attended the online session. The detailed Information is given as follows.

#### The participant list of the TC meeting:

Lu Yu, Yun He, Babak Ayazifar, Ljiljana Trajkovic, Randy Geiger, Robert Rieger, Joos Vandewalle, Ramachandran Ravi Prakash, Ricardo Reis, Yinan Sun, Joern Velten, Zhibo Chen.

#### **Brief version of meeting minutes:**

- 1. Approval of the agenda
- 2. Self-introduction of members attending the TC meeting
- 3. Introduction about 2020-TC report
- 4. Review of support to ISCAS 2020
  - Introduction of ISCAS 2020 meeting status, session arrangement of CASEO-TC track
  - Introduction of the Oral Session by session chair Babak Ayazifar and the Poster session by session chair Zhibo Chen
  - Discussion about the special session proposal for ISCAS-2021
- 5. Discuss about promotion of TC activities by management of membership, updating TC website and using social network
- 6. Call for nomination of new members
  - Prof. Yun He nominated Yinan Sun from Tsinghua University, China
  - Discussed and agreed to accept self-nomination and graduate students
- 7. Information on some of previous special issues on circuits and systems education published in the IEEE Circuits and Systems Magazine and ask for consideration of potential proposal for a new special issue on circuits and systems education.

# 2. Voting Members:

First Name	Last Name	Affiliation	Email	IEEE Grade	IEEE Region
Pamela	Abshire	University of Maryland	pabshire@umd.edu	Fellow	1~6
M. Omair	Ahmad	Concordia University	omair@ece.concordia.ca	Fellow	7
Eduard	Alarcon	UPC, Barcelona	eduard.alarcon@upc.edu	Senior member	8
Massimo	Alioto	Univ. Siena	malioto@ieee.org	Fellow	10
Babak	Ayazifar	Univ. California	ayazifar@eecs.berkeley.edu		1~6
Magdy	Bayoumi	University of Louisiana	mab@cacs.louisiana.edu	Fellow	1~6
Mario	Biey	Polit. Torino	mario.biey@polito.it		8
Sergio	Callegari	Univ. Bologna	Sergio.callegari@unibo.it		8
		University of Science		Senior member	40
Zhibo	Chen	and Technology China	chenzb@ieee.org	Senior member	10
Malgorzata	Chrzanowska-Jeske	Portland State Univ.	jeske@ece.pdx.edu		1~6
Martin	di Federico	Univ. Nacional del Sur	mdife@ieee.org	Senior member	9
Orla	Feely	Univ. College	orla.feely@ucd.ie		
Randy	Geiger	Iowa State University	rlgeiger@iastate.edu	Fellow	1~6
Magdy Tawfik	Hanna	Fayoum University	hanna@ieee.org	Life Senior Member	8
Yun	He	Tsinghua University	hey@tsinghua.edu.cn	Fellow	10
Yih Fang	Huang	Univ. Notre Dame	huang@nd.edu	Fellow	4
Mohsin	Jamali	University of Toledo	Mohsin.Jamali@utoledo.edu	Senior member	5
Izzet	Kale	Univ. of Westminster	kalei@wmin.ac.uk		8
Shoba	Krishnan	Santa Clara University	skrishnan@scu.edu		1~6
		Tampere Univ.			
Raija	Lehto	Technology	raija.lehto@ieee.org		8
Jiaying	Liu	Peking University	liujiaying@pku.edu.cn		10
Arjuna	Madanayake	University of Akron	arjuna@uakron.edu		1~6
Pui-In (Elvis)	Mak	University of Macau	PIMak@umac.mo	Fellow	10
Wolfgang	Mathis	Univ. of Hannover	mathis@tet.uni-hannover.de		8
Fernando Gehm	Moraes		Moraes@pucrs.br	Senior Member	9
Josef A.	Nossek	Tech. Univ. München	josef.a.nossek@tum.de	Life Fellow	8
Tokunbo	Ogunfunmi	Santa Clara Univ.	togunfunmi@scu.edu	Senior Member	
Ravi P.	Ramachandran	Rowan University	ravi@rowan.edu	Senior Member	1~6 2
Ravi F.	Namachanuran	Federal University of	ravi@rowan.edu	Seriioi ivierribei	2
Ricardo	Reis	Rio do Grand Sul	reis@inf.ufrgs.br	Senior Member	9
Robert	Rieger	Kiel University	rrieger@mail.nsysu.edu.tw rri@tf.uni-kiel.de	Senior member	8
M.N.S.	Swamy	Concordia Univ. Montreal	swamv@encs.concordia.ca	Fellow	7
Yinan	Sun	Tsinghua University	sunyinan@tsinghua.edu.cn	Member	10
Yap-Peng	Tan	NTU	EYPTan@ntu.edu.sg	Fellow	10
Tuna	Tarim	Texas Instruments	tuna@ti.com		1~6
Sergios	Theodoridis	Univ. Athens	stheodor@di.uoa.gr	Life Fellow	10
Ljiljana		Simon Fraser Univ.	Strict and the strict		
Trajkovic	Trajkovic	Vancouver	ljilja@cs.sfu.ca	Life Fellow	7
Joos	Vandewalle	K. U. Leuven	Joos.vandewalle@esat.kuleuv en.be	Fellow	8
Joerg	Velten	University of Wuppertal	velten@uni-wuppertal.de	Senior member	8
Srinivasa	Vemuru	Ohio Northern University	s-vemuru@onu.edu		1~6
Yongxiang	Xia	Hangzhou Dianzi University	xiayx@hdu.edu.cn	Senior member	10
<u> </u>		Lassonde School of		Fellow	7
Yong	Lian	Engineering, York U	eleliany@gmail.com	Sonior mombor	10
Lu	Yu	Zhejiang University	yul@zju.edu.cn	Senior member	10

Geographical distribution of TC members (percentage of total)

	Count	2020
Total number of TCs	42	%
Regions 1 – 6 (U.S.A.)	13	31.0
Region 7 (Canada)	4	9.5
Region 8 (Europe/Africa,	12	28.6
Middle East)		
Region 9 (Central/South	3	7.0
America)		
Region 10 (Asia/Pacific)	10	23.8

Gender distribution of TC members (percentage of total)

	Count	2020
Total number of TCs	42	%
Male	36	86
Female	6	14

Distribution of TC members by affiliation (percentage of total)

	Count	2020
Total number of TCs	42	%
Academia	42	100
Industry		
Government		

# 3. Accomplished Technical Activities

## 3.1. IEEE Conference/Event organizations

(First priority, please highlight conference/events are technically and financially co-sponsored by the CAS Society)

Your Name	Conference Sponsors	Conference/Event Title	Your Role
Zhibo Chen	IEEE CAS	VCIP 2020	Area chair
Zhibo Chen	IEEE CAS	ISCAS 2021	Track Chair
Zhibo Chen	IEEE CAS	ISCAS 2020	Session Chair
Mohsin Jamali	IEEE CAS	2021 IEEE Nordic Circuits and Systems Conference (NorCAS)	Technical Program Committee
Mohsin Jamali	IEEE CAS	2021 IEEE 64th International Midwest Symposium on Circuits and Systems	Steering Committee
Yong Lian	IEEE CAS	the 2020 IEEE International Symposium on Integrated Circuits and Systems (ISICAS2020)	General Co-Chair
Yong Lian	IEEE CAS	the 2020 IEEE International Flexible Electronics Technology Conference (postponed to 2022 due to COVID-19)	General Co-Chair
Ricardo Reis	IEEE CAS	ICECS2020, IEEE International Conference on Electronics, Circuits and Systems, November 22-25, 2020	Track Chair and Publicity Chair
Ricardo Reis	IEEE CAS	IEEE CASS Rio Grande do Sul Talks (webinars) 2020- 2021	Chair
Ricardo Reis	IEEE CAS	2020 Industrial Talks by IEEE CASS Rio Grande do Sul (webinars)	Chair
Ricardo Reis	IEEE CAS	ISCAS 2021	RCM
Ricardo Reis	IEEE CAS	LASCAS 2021, 12th IEEE Latin American Symposium on Circuits and Systems, Peru (virtual), February 22-25, 2021	Member of the TPC
Ricardo Reis	SBC SBMicro IEEE CAS ACM SIGDA IEEE CEDA	SBCCI 2020, 33rd Symposium on Integrated Circuits and Systems Design, Campinas, Brazil, August 24-28, 2020	Member of the TPC
Ricardo Reis	IFIP WG 10.5 IEEE CAS	IFIP/IEEE VLSI-SoC 2020 (IFIP/IEEE International Conference on Very Large Scale Integration)	Member of the TPC

	IEEE CEDA		
Ricardo Reis	IEEE CAS	10th IEEE CASS Rio Grande do Sul Workshop,	Program Chair
		Virtual Edition from Porto Alegre, Brazil,	
		November 10-13, 2020	
Ricardo Reis	IEEE CAS	NEWCAS 2020, 18th IEEE International	Publicity co-chair
		NEWCAS Conference, June 16-19, 2020,	-
		Montréal, Canada (Virtual)	
Robert Rieger	IEEE CAS	ISCAS 2021	RCM
Joerg Velten	IEEE CAS	ISCAS 2021	RCM
Yongxiang	IEEE CAS	ISCAS 2021	RCM
Xia			
Lu Yu	IEEE CAS	ISCAS 2021	Track Chair

#### (Second priority, please highlight conference/events are technically by the CAS Society)

Your Name	Conference Sponsors	Conference/Event Title	Your Role

#### Please don't report conference/events are NOT by the CAS Society. Thank you!

#### 3.2. IEEE Journal Editorships:

(Please highlight the journals that are (co-)sponsored by the CAS Society, cf., https://ieee-cas.org/publications)

Your Name	Journal	Journal Title	Your Role
	Sponsors		
Zhibo Chen	IEEE CAS	IEEE Trans. on Circuits and Systems for Video Technology	Associated Editor
Yong Lian	IEEE	IEEE Press	Editor Board Member
Yong Lian	IEEE CAS	IEEE Open Journal of Circuits and Systems	Guest Editor
Ricardo Reis	IEEE CEDA IEEE CAS IEEE SSCS IEEE TTTC	IEEE Design & Test	Member of the Editorial Board as Latin America Liaison
Ricardo Reis	IEEE CAS	IEEE CASS Magazine	Associate Editor
Ricardo Reis	IEEE IoT Initiative (CASS is a member)	IEEE IoT Magazine	Member of the Management Board representing CASS
Robert Rieger	IEEE CAS	IEEE Trans. Biomedical Circuits and Systems	Associated Editor
Robert Rieger	IEEE CAS	IEEE Trans. Circuits and Systems I	Associated Editor
Robert Rieger	IEEE CAS	IEEE Trans. Circuits and Systems II	Guest Editor
Yap-Peng Tan	IEEE CAS	IEEE Trans. on Circuits and Systems for Video Technology	Associated Editor
Yongxiang Xia	IEEE CAS	IEEE Trans. Circuits and Systems II	Associated Editor
Lu Yu	IEEE CAS	IEEE Trans. on Circuits and Systems for Video Technology	Associated Editor
Lu Yu	IEEE CAS	IEEE Trans. on Circuits and Systems for Video Technology	Guest Editor
Lu Yu	IEEE	Proceedings of the IEEE	Guest Editor

#### Please don't report journals are NOT by the CAS Society. Thank you!

#### 3.3. Awards, Honors, and Recognition

(Fellow, Distinguished Lecturer, Outstanding Service, Best Paper Awards, and so on by the CAS Society)

Your Name	Awards / Honors / Recognition	Period
Yong Lian	Fellow of the Canadian Academy of Engineering	2020 -
Ljiljana Trajkovic	Distinguished Lecturer	2021 - 2022
Ricardo Reis	Scientific Merit Award by Brazilian Computer Society	September 2020

#### 3.4. Keynote Speeches/Invited Talks:

Invited by	Event/Conference Title	Talk Title		Date
· ·	•	U	Image/Video	June 12, 2020
CVPR 2020		Coaing		
(		Organizer of CLIC, CVPR 2020 Workshop and	Organizer of CLIC, CVPR 2020 Workshop and Challenge on Learned Image Coding	Organizer of CLIC, CVPR 2020 Workshop and Coding Learning-based Image/Video CVPR 2020 Challenge on Learned Image

Ricardo Reis	Xidian University	Invited Talk at the 2020 International Workshop on Advanced Electronic Automation	Optimisation is a Keyword in IoT	January 10-11, 2020
Ricardo Reis	ASPDAC	Invited Tutorial at 25th Asia and South Pacific Design Automation Conference, ASP-DAC, Beijing, China	Physical Design Automation Challenges for Monolithic 3D Circuits	January 13-16, 2020
Ricardo Reis	ISCAS	ISCAS 2021 overview lecture	Low Power Challenges in IoT and IoE	May 2021
Ricardo Reis	National Polytechnic University of Armenia	Invited webinar	Low Power Challenges in IoT and IoE	April 7, 2021
Ricardo Reis	IEEE CASS IEEE CEDA	4 Talks: Introduction to EDA, Automatic Cell Generation Visualization Tools Synthesis of 3D Circuits	IEEE CASS/CEDA Seasonal School on Electronic Design Automation	December 7 - 11, 2020
Ricardo Reis	SOFTSUL	Invited Talk at Innovation Tech Knowledge 2020	IoT as a strategy for the success of economic ecosystems	October 5, 2020
Ricardo Reis	SBC SBMicro IEEE CASS IEEE CEDA	Invited Talk at EMicro 2021, 23° South Microelectronics Symposium	Trends on EDA	April, 2021
Ljiljana Trajkovic	IEEE CASS Chapter, Indonesia Section	CAS Society Distinguished Lecture	"Data mining and machine learning for analysis of network traffic"	April 26, 2021
Ljiljana Trajkovic	ICCAE 2021 Conference Organizers	13th International Conference on Computer and Automation Engineering, Melbourne, Australia (keynote talk)	"Detecting Internet worms, ransomware, and blackouts using recurrent neural networks"	March 21, 2021
Ljiljana Trajkovic	Prof. Chunhua Yang	Central South University, Changsha, China (invited talk)	"Detecting Internet worms, ransomware, and blackouts using recurrent neural networks"	February 6, 2021
Ljiljana Trajkovic	ICBDE 2021 Conference Organizer's	The 4th International Conference on Big Data and Education (keynote talk)	"Detecting Internet worms, ransomware, and blackouts"	February 4, 2021
Ljiljana Trajkovic	Prof. Celia Shahnaz	WIECON-ECE 2020 (keynote talk)	"Detecting Internet worms, ransomware, and blackouts"	December 25, 2020
Ljiljana Trajkovic	Prof. Celia Shahnaz	ICECE 2020 (keynote talk)	"Detecting Internet worms, ransomware, and blackouts"	December 17, 2020
Ljiljana Trajkovic	Prof. Wei Zhu	International Workshop on Complex Systems and Networks (IWCSN 2020) (invited talk)	"Detecting Internet worms, ransomware, and blackouts"	October 24, 2020
Ljiljana Trajkovic	ICICM 2020 Conference Organizers	2020 IEEE 5th International Conference on Integrated Circuits and Microsystems (keynote talk)	"Detecting network anomalies and intrusions"	October 24, 2020
Ljiljana Trajkovic	IEEE SMC Society Chapter, Malaysia Section	IEEE SMC Society Distinguished Lecture	"Data mining and machine learning for analysis of network traffic"	October 23, 2020
Ljiljana Trajkovic	CoCoNet'20 Conference Organizers	Fourth International Conference on Computing and Network Communications (keynote talk)	"Detecting network anomalies and intrusions,"	October 16, 2020
Ljiljana Trajkovic	Prof. Ildar Batyrshin	16th Mexican International Conference on Artificial Intelligence (keynote talk)	"Machine learning techniques for detecting network anomalies"	October 15, 2020
Ljiljana Trajkovic	ICEBI 2020 Conference Organizers	2020 4th International Conference on E-Business and Interne	"Complex networks"	October 10, 2020
Ljiljana Trajkovic	Prof. Yingxu Wang	19th IEEE International Conference on Cognitive Informatics and Cognitive Computing (keynote talk)	"Complex networks"	September 26, 2020
Ljiljana Trajkovic	Prof. Cemal Dolicanin	6th International Conference Contemporary Problems of Mathematics, Mechanics and Informatics (invited talk)	"Detecting network anomalies and intrusions"	September 21, 2020

Ljiljana	Prof. Rodolfo Fiorini	Global Transformative	"Global Leadership in the 21st	June 16, 2020
Trajkovic		Leadership in the 21st	Century"	
_		Century: A Science,		
		Engineering, Technology		
		Integrated and Strategic		
		Perspective (invited talk)		

#### 3.5. Other distinguished IEEE services

(For example, CAS BoG, Region/chapter leadership, TC chairs/secretary)

Your Name	Organization	Position/Activities	Period
Lu Yu	IEEE CAS	Chair of CASEO TC	2020-2022
Zhibo Chen	VSPC-TC	Secretary of VSPC TC	2020-2022
Ricardo Reis	IEEE CAS	BoG	2020-2022
Ricardo Reis	IEEE CAS	Representation of R9 at RAM Division	2020-2022
Ricardo Reis	IEEE IoT Initiative	Member of the IEEE IoT Initiative representing IEEE CASS	2021
Ricardo Reis	IEEE CEDA	Member of the IEEE CEDA representing IEEE CASS	2020-2021
Ricardo Reis	IEEE CAS	Member of IEEE LASCAS Steering Committee	2020-2021
Ricardo Reis	IEEE CAS	Member of IEEE ICECS Steering Committee	2020-2021
Ricardo Reis	IFIP WG 10.5 IEEE CAS IEEE CEDA	Member of IFIP/IEEE VLSI-SoC Steering Committee	2020-2021
Ricardo Reis	IEEE CAS	Member of IEEE NEWCAS Steering Committee	2020-2021
Ricardo Reis	IEEE CAS	Member of the IEEE CASS Rio Grande do Sul Chapter Board as Past Chair	2020-2021
Ljiljana Trajkovic	IEEE	Member, IEEE Election Oversight Committee	2021
Ljiljana Trajkovic	IEEE CAS	Member, IEEE CASS Meritorious Service Award Sub-Committee	2020 - 2021
Ljiljana Trajkovic	IEEE	Chair, IEEE Gustav Robert Kirchhoff Award Committee	2020 - 2021
Ljiljana Trajkovic	IEEE	Member, IEEE Tellers Committee	2020 - 2021
Ljiljana Trajkovic	IEEE	Member, IEEE History Committee	2020 - 2021
Ljiljana Trajkovic	IEEE	Member, IEEE Technical Activities Board, Nominations and Appointments Committee	2020 - 2021
Ljiljana Trajkovic	IEEE	Member, Financial Transparency ExCom	2018 - 2021
Ljiljana Trajkovic	IEEE CAS Society	Chair, IEEE Circuits and Systems Society joint Chapter of the Vancouver/Victoria Sections	2001 - 2021
Ljiljana Trajkovic	IEEE	Division X Delegate/Director	2019 - 2020
Ljiljana Trajkovic	IEEE SMC Society	Vice-Chair, IEEE Control Systems Society, Robotics and Automation Society, and Systems, Man, and Cybernetics Society Chapter of the Vancouver Section	2011 - present
Ljiljana Trajkovic	IEEE Simon Fraser University Student Branch	Mentor	2008 - present

#### 5. TC Significant Technical Leadership and Innovations

Please list 5 (or less) most significant TC activities in the past year, for example, but not limited to

- (1) Established/organized new CASS journals/conferences/workshops
  - a. Please include title, scope, status (e.g., submissions, published papers)
- (2) Organized special issues in CASS journal, special sessions/tutorials in CASS conferences, CASS seasonal schools, CASS industrial forums, or CASS competitions
  - a. Please include title, the guest editors/organizers, the year, and the month, the number of submissions, the number of papers published, and the impacts (e.g., the total number of citations/full text views so far or the total number of attendees)
- (3) Organized new CASS initiatives
- (4) Established cross-TCs/SIGs collaborations
- (5) Awards received by the TC or the TC members
- 1. Organized special issues/sections in CASS journal
  - Robert Rieger: Guest editor for Special Issue on the 2021 IEEE International Symposium on Circuits and Systems, IEEE TCAS-II, 35 papers published
  - Lu Yu: Guest editor for Special Section on Learning-Based Image and Video Compression, IEEE TCSVT, 2020.7, 12 papers published, 90 citations according to google scholar.
- 2 Awards received:
  - Ljiljana Trajkovic: 2021 IEEE Vancouver Section Service Award, March 31, 2021

- Ljiljana Trajkovic: 2020 IEEE Systems, Man, and Cybernetics Society, Joseph G. Wohl Outstanding Career Award, for long term contributions to the Systems, Man, and Cybernetics Society, and IEEE, October 13, 2020.
- Ricardo Reis, received the Scientific Merit Award by Brazilian Computer Society, September 2020
- Ricardo Reis, launched a series of IEEE CASS Talks (webinars), in 2020-2021, organized by IEEE CASS Rio Grande do Sul Chapter, but broadcasted globally by YouTube. More information at: How CASS-RS Transformed Local Face-to-Face Seminars into Global Webinars, Ricardo Reis, Raphael Brum and José Rodrigo Azambuja, IEEE CASS Magazine, Vol. 20, Issue 4, p. 78-87, 2020, DOI: 10.1109/MCAS.2020.3027224

#### 6. TC CHARTER:

- (1) How can your TC amend the TC name/scope/charter, if the ballots are collected at a TC meeting or by internet? What is the quorum for a valid ballot? What is the required % to pass the amendment?
  - In the current Bylaws of CASEO TC, "Future amendments to these bylaws will be by majority voting from the committee members present at the meeting or by majority voting of members at large through email. The process should be initiated by the chair."
- (2) How can your TC select the TC Chair? Does the Chair-Elect is elected 1 year or 2 years earlier? Do you allow an out-of-sequence election for the Chair (if the Chair-Elect cannot assume the role of Chair)?

The recent practice was that the Chair-Elect became the Chair immediately after the ISCAS meeting of the turn-round year, and the Chair-Elect was elected 2-years earlier than he/she becomes Chair.

There is no clause defining the case of out-of-sequence election for the Chair.

(3) Does the TC have a membership structure that specifies the number of years and terms that a member can serve?

Not yet.