

# IEEE CSS TC SIAC meeting ACC 2022

Simone Formentin

<http://system-identification.ieee-css.org>



Virtual meeting  
Thursday, June 9th 2022



# Round virtual-table

- Please introduce yourself



# Outline

- ① Status
- ② Activities
- ③ Opportunities
- ④ A final note



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- TC SIAC membership available to any IEEE member in good standing upon request to the TC chair (CV + proof of IEEE membership required).
- As of today: **98 members** (8 new members in 2021-2022), **5 student members**.
- Please encourage your students to join the TC (involvement of young people is essential).

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# Activities: special issues and invited sessions

- Special Section on **Estimation and Control of Quantum Systems**, *Annual Reviews in Control*, 2022, Guest Editors: Ian R. Petersen, Daoyi Dong
- Special Issue on **Control, Estimation, and Machine Learning in a Quantum Framework**, *Journal of The Franklin Institute*, 2022, Guest Editors: Guofeng Zhang, Alfio Borzi, Daoyi Dong, Ian R. Petersen
- Special Issue on **New Results on Adaptive Systems**, *International Journal of Adaptive Control and Signal Processing*, 2022, Guest Editors: Stanislav Aranovskiy, Alexey Bobtsov, Anton Pyrkin
- Invited session on **Parameter Estimation under Relaxed Excitation Conditions**, *IFAC Adaptive and Learning Control Systems (ALCOS) 2022*, Organizers: Stanislav Aranovskiy, Alexey Bobtsov



# Activities: ACC 2022

- ✓ 4 sessions including the word “identification”, 4 sessions about “adaptive control”
- ✓ 12 sessions on “learning-based approaches” (many of them are invited)
- ✓ One plenary session on control using deep learning, Draguna Vrabie (Pacific Northwest National Laboratory)



# Activities: the TC student award

- **Objectives:**
  - Recognize young talent associated with a technical area
  - Promote student membership and participation in the TCs
- Each award is given to a student that is (possibly the first) author of a CDC paper (possibly CCTA) AND also a member for a CSS TC
- Each TC has its own award
- The award is presented at a TC-sponsored event, not at the CDC awards ceremony (this time: ACC 2022).
- Minimalist nomination process:
  - Any TC member can nominate a paper to the prize through an email to the TC chair, containing a statement that the student is the primary author of the paper.
  - Self-nominations are allowed, but the nomination email must be carbon-copied to all the authors.



# The TC student award

- The selection committee consists of 4 persons selected by TC chair in consultation with CSS Awards Chair and the Vice-President for Technical Activities.
- Members of the selection committee cannot nominate any paper and cannot be co-authors in any of the papers under consideration for the prize.
- The selection process is mostly managed by TC chair, who makes a recommendation to the general conference chair. The certificate is signed by the general conference chair and the TC chair. This guarantees oversight by an independent entity outside the committee.



# The TC student award

- 2021 program wrapped up. Winners of five participating TCs for three prizes announced (to appear in CSM August issue)
  - ① Hybrid Systems and Discrete-Event Systems
  - ② Health and Medical Systems and Systems of Synthetic Biology
  - ③ Distributed Parameter Systems
- 2022 program: 8 TCs participated with 7 prizes (4 have wrapped the process)
  - ① Aerospace Control
  - ② Automotive Control
  - ③ Discrete Event Systems
  - ④ Networks and Communication Systems
  - ⑤ Power Generation
  - ⑥ Smart Cities
  - ⑦ **System Identification and Adaptive Control, joint with Intelligent Control**



# Our TC student award

- Selection Committee for the TC SIAC-IC prize:
  - ① Kiana Karami
  - ② Daoyi Dong
  - ③ Paulo Lopes dos Santos
  - ④ Simone Formentin
- 4 nominations received
- Main evaluation criteria:
  - ① Clarity
  - ② Potential impact on future research and applications
  - ③ Novelty
- And the winner is...



# 1st winner of TC student award



*2022 Joint System Identification and Adaptive Control TC and Intelligent Control TC  
Outstanding Student Paper Prize  
presented to*

***Lucian Cristian Iacob***

*for the paper entitled*

***Deep Identification of Nonlinear Systems  
in Koopman Form***

*co-authored with Gerben Izaak Beintema, Maarten Schoukens, and Roland Toth, published at the 2021 60<sup>th</sup>  
IEEE Conference on Decision and Control*



*Simone Formentin*  
*System Identification and Adaptive Control TC Chair*

*Thomas Parisini*  
*CSS President*



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# Opportunities: budget, website and social media

- IEEE may financially support the TC activities **up to 3000\$ per year**. Priority: ACC/CDC workshops or any event involving TC members, PhD/master students.
- Use of the website/social media):
  - Collection of teaching material
  - Peer-reviewed data and models
  - SW repositories
  - Announcements of events
  - List of job opportunities
  - Recommended books and papers (links)



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# Engagement?

- LinkedIn: launched on Feb 15th, 2022, **18 members**.



- Twitter: launched on Feb 15th, 2022, **5 followers**.

