

IEEE CSS TC SIAC meeting ACC 2020

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<http://system-identification.ieeecss.org>



(All around the world, except) Denver, CO, USA
Friday, July 3rd 2020



Thanks, Guillaume!



- 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: **87 members** (3 new members: Steffi Knorn, Balázs Csáji and Marco Forgione), **2 student members**.
- Please encourage your students to join the TC (involvement of young people is essential).



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Activities: organization of events

- One-day Virtual Workshop: *Learning sparse models: theory and applications from system identification to neural networks* (September 14-18, 2020 - TBD)
 - Organizers: S.M. Fosson, D. Regruto
- 19th IFAC Symposium on System Identification - Learning Models for Decision and Control (**SYSID2021**, July 14-16, 2021, Padua, Italy)
 - General Chair: A. Chiuso
 - IPC Chairs: R. Smith, P. van den Hof

Officially supported by our TC (IEEE/IFAC invited speech - TBD)

- 4th IFAC Workshop on Linear Parameter Varying Systems (**LPVS2021**, July 19-20, 2021, Milan, Italy)
 - NOC Chair: S. Formentin (Co-chair: M. Lovera)
 - IPC Chair: P. Lopes Dos Santos



Activities: organization of invited sessions

- IFAC World Congress 2020 (July 12-17, 2020)
 - Modelling, Identification and Control of Quantum Systems (Daoyi Dong)
 - Data-driven methods for decisions and control (Marco Campi, Algo Caré, Simone Garatti)
 - Results on Nonlinear System Identification Benchmarks (Maarten Schoukens)
 - Data-driven Modeling and Learning in Dynamic Networks (Paul van den Hof, Alessandro Chiuso and Jorge Goncalves)
 - Open Invited Track with 11 papers, including one survey extended abstract
- Proposals for CDC 2020 (December 8-11, 2020)?



- Carlo Novara, Simone Formentin (ed.): *Data-Driven Modeling, Filtering and Control: Methods and applications*, IET Control, Robotics and Sensors, 2019
- Special issue of IJRNC: *New trends in modelling and control of hybrid systems* (D. Piga, A. Bemporad) -
 - Submitted papers: 22
 - Papers asked to be re-submitted after first review: 14
 - Papers accepted: 12 + 1 still under review
 - Expected publication date: September 2020
- New Research Topics “*LPV systems modelling, identification and control*” (P. Lopes Dos Santos, Jose Ramos, Teresa Perdicoúlis, Olivier Sename) and “*The use of electronic senses technology in control oriented applications*” (Jose Ramos) for the journal *Frontiers in Control* ¹

¹Frontiers' RTs are peer-reviewed article collections (published as free e-books if 10+ papers).

Research activities

- System identification for teaching analytics
(Damiano Varagnolo, Steffi Knorn)



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Opportunities: budget and website

- 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:
 - Collection of teaching material
 - Peer-reviewed data and models
 - SW repositories
 - Announcements of events
 - List of job opportunities
 - Recommended books and papers (links)



Opportunities: the TC student award

- Each award is given to a student that is an author of a CDC paper AND also a member for a CSS TC. The award is given at the CDC of year N for a paper presented at the CDC of year $N - 1$ (nomination process TBD)
- Each TC has its own award, e.g., named “TC SIAC Outstanding Student Paper Award” (no money, just a certificate).
- Objectives:
 - Recognize young talent associated with a technical area
 - Promote student membership and participation in the TCs
- The award is presented at a TC-sponsored event, not at the CDC awards ceremony.
- For 2020, these awards will be restricted to the following TC’s on a trial basis: *Hybrid Systems + Discrete-Event Systems*, *Health and Medical Systems* (+Systems and Synthetic Biology?)
- **What about us?**



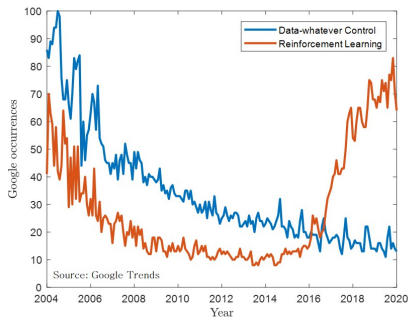
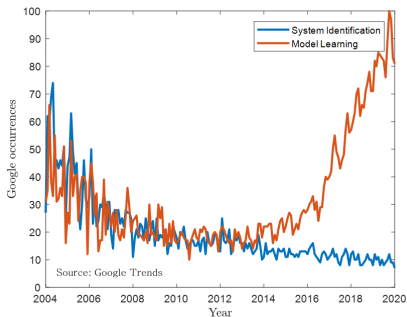
Outline

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A final note on how to attract (young?) people

- From Google Trends (normalized occurrences)



- Main consequences: low attendance to IFAC SYSID 2018, few people in (pure) SysID sessions @CDC?



What happened?

- Some people (outside this TC) discovered that it is possible to use data for modeling and control



- Some of our traditional topics are becoming new trends in the machine learning field

Are we going to be gobbled up?



My personal opinion

- NO! This is the **GOLDEN AGE** of system identification and adaptive/data-based control
- We should be **leaders** of the development of the field (60+ yrs of experience!) and students should be aware of that
- Countermeasures (against fashion trends):
 - SYSID2021: *Learning Models for Decision and Control*
 - We should not be afraid to use **different keywords** together with the classical ones
 - Import **good practices** from other communities (e.g., code sharing for repeatable research)
 - Change the **name** of this TC?
 - Other suggestions?



The End

