CSS Technical Committee on Discrete Event Systems

Report by Kai Cai

2020.07.10

About this report

- Last week (July 1-3), ACC 2020 was held virtually.

- During ACC in the past, we usually had a TC meeting.

- I thought about holding a Zoom TC meeting, but found it difficult given the time differences.

- Instead, I am sending this report that includes some updates about and news relevant to our TC.

Content

- General information about TC (for new members)

- TC membership

- TC-sponsored student conference paper awards

- New journal special issue CFPs

- Call for items to be included in the CSM TC report

General info on CSS website

http://discrete-event-systems.ieeecss.org

Technical Committee On Discrete Event Systems

NAVIGATION

HOME

MEMBER ROSTER

NEWSLETTERS

EVENTS

RESOURCES

APPLICATIONS

Updated periodically

View   Edit   Delete   Rearrange

HOME

Welcome to the Technical Committee on Discrete Event Systems (DESTC), a part of the **IEEE Control Systems Society Technical Activities Board**. The DESTC was established on June 1, 1999, and subsumes the activities of the **Working Group on Discrete Event Systems**.

Chair:

- **Kai Cai**   Osaka City University   **kai.cai@eng.osaka-cu.ac.jp**

Co-Chairs:

- **Eric Rutten**   INRIA Grenoble - Rhone-Alpes   **Eric.Rutten@inria.fr**
- **Xiang Yin**   Shanghai Jiao Tong University   **yinxiang@sjtu.edu.cn**
- **Anne-Kathrin Schmuck**   Max Planck Institute   **akschmuck@mpi-sws.org**

About newsletters: how to submit your news items

1. Use the following website:

https://www.control.eng.osaka-cu.ac.jp/miscellaneous/css-tc-des/submission

Topic

Select a topic within newsletter ⌄

Your Name

Your Email Address

Message

Please edit your message here

About newsletters: how to submit your news items

2. Send an email to our group mailinglist:

csstcdes-list@nd.edu

3. Send an email to Kai Cai:

kai.cai@eng.osaka-cu.ac.jp

Content

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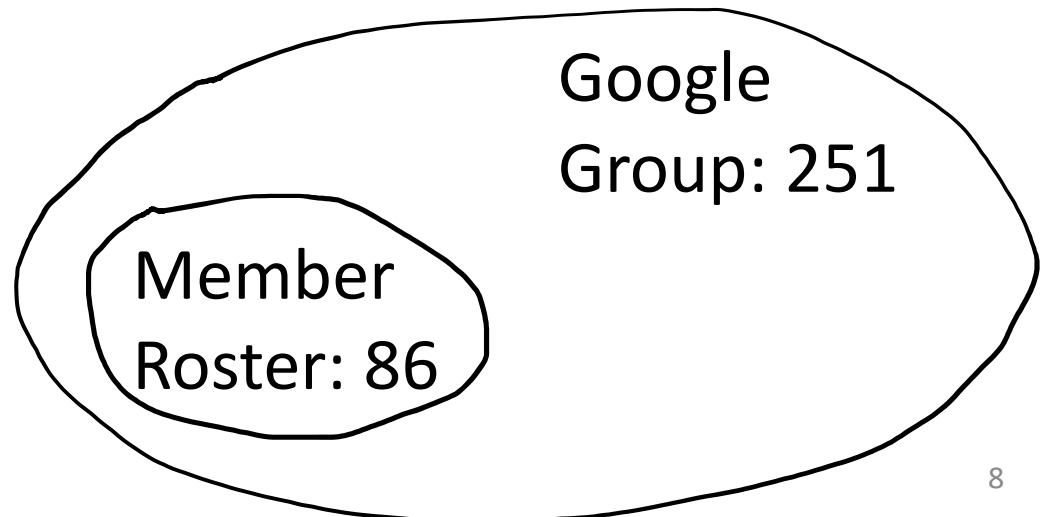# Membership (two different lists)

- On CSS website:

"Member rosters"

http://discrete-event-systems.ieeecss.org/discrete-member-roster

- On Google group:

"IEEE CSS Technical Committee on Discrete Event Systems"
https://groups.google.com/a/nd.edu/forum/?hl=en#!forum/csstcdes-list

- As of CDC 2019,

the two lists mismatched:

Google
Group: 251

Member
Roster: 86

Membership (two lists unified)

- This mismatch has now been cleaned up.

(Thanks to all having replied to my emails.)

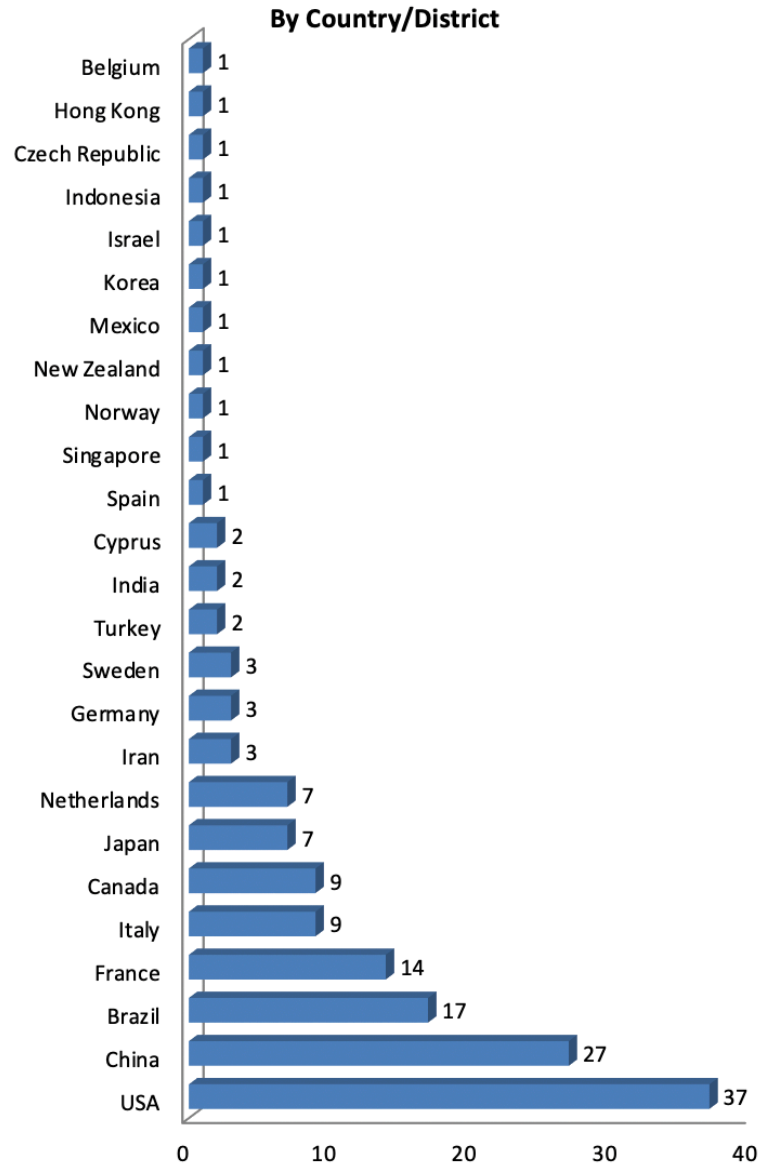As of July 5, 2020:

- On CSS website: 153

"Member rosters"

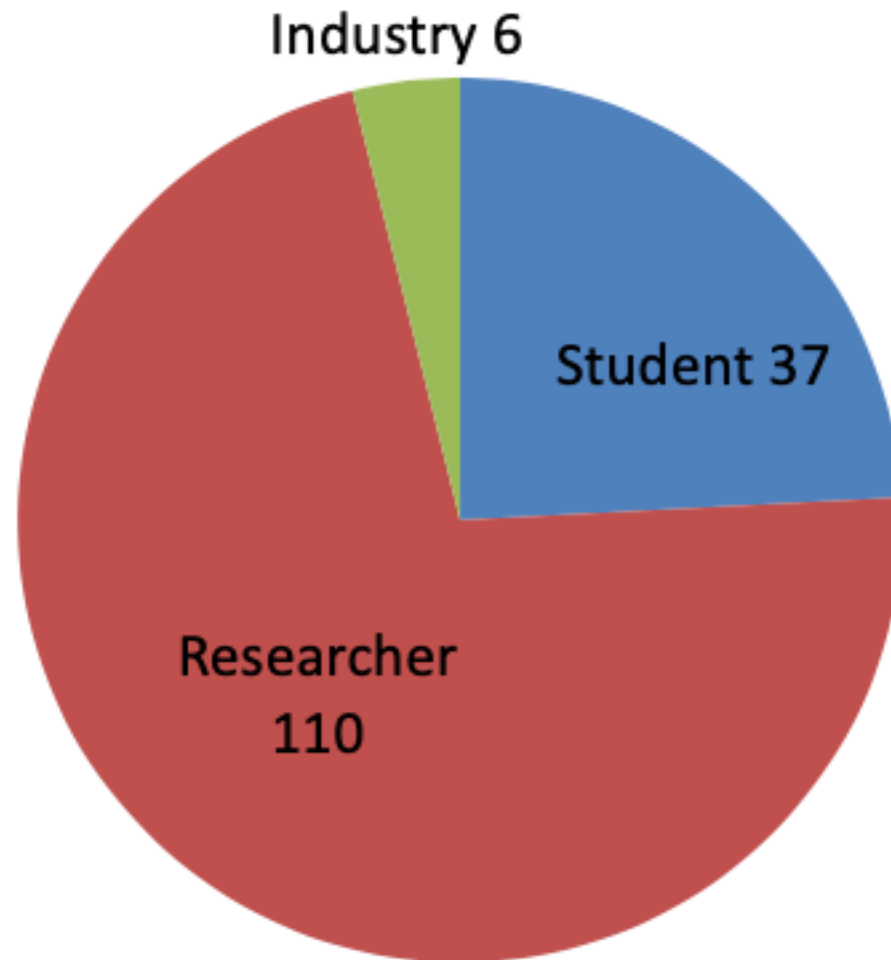http://discrete-event-systems.ieeecss.org/discrete-member-roster

- On Google group: 153

"IEEE CSS Technical Committee on Discrete Event Systems"
https://groups.google.com/a/nd.edu/forum/?hl=en#!forum/csstcdes-list

Member statistics

By Country/District

Country/District	Count
Belgium	1
Hong Kong	1
Czech Republic	1
Indonesia	1
Israel	1
Korea	1
Mexico	1
New Zealand	1
Norway	1
Singapore	1
Spain	1
Cyprus	2
India	2
Turkey	2
Sweden	3
Germany	3
Iran	3
Netherlands	7
Japan	7
Canada	9
Italy	9
France	14
Brazil	17
China	27
USA	37

Member statistics

New membership

- New members are still incoming and always welcome.

- Please encourage your students and colleagues who might be interested in our TC to join us.

- To join the TC, please send me an email (kai.cai@eng.osaka-cu.ac.jp) with the following information:
    - Name:
    - Affiliation:
    - Email address (preferably affiliation email):
    - Student or not:
    - If student, expected years before obtaining highest degree (PhD, or Master's):

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TC-sponsored student conference paper awards

- IEEE CSS is creating new TC-specific awards to
  - Recognize young talents associated with a technical area
  - Promote student membership and participation in the TCs

- The first such awards will be for papers published at the proceedings of CDC 2020. The selection will start after CDC 2020, and the awards will be given at CDC 2021.

- For this first time, one (1) award will be given to our TC and TC Hybrid Systems.

- There will be a selection committee, chaired by myself and the chair of TC Hybrid Systems

TC-sponsored student conference paper awards (eligibility)

- The primary author must be a student at the time of paper submission
- The primary (student) author must present the paper at CDC, or at least registered for CDC
- The primary (student) author must be an IEEE student member, CSS member and TC member, at the time of CDC (Financial aid for IEEE and CSS membership is possible)
- Any TC member can (self-)nominate a paper that satisfies the above conditions, by sending me an email carbon-copied to all the authors and including a statement that the student is the primary author of the paper
- Call for nominations will be sent around CDC 2020
- Papers that selection committee members co-author are not eligible.

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New journal special issue CFPs

- Special issue "Security, Privacy and Safety of Cyber-Physical Systems"

- Special issue "PID Control for Discrete-Event, Switched, and Hybrid Systems"

Special issue "Security, Privacy and Safety of Cyber-Physical Systems"

➢ **Journal:** Nonlinear Analysis: Hybrid Systems

➢ **Guest editors:** Kai Cai, Maria Prandini, Xiang Yin, Majid Zamani

➢ **Submission deadline:** Nov. 30, 2020 (tentative)

➢ **Submission website:** open soon (will announce through email)

➢ **Main objective:** promote recently developed novel approaches devoted to analysis and enforcement of security, privacy and safety of cyber-physical systems using formal techniques

Joint work with TC Hybrid

Topics include (but not limited to)

- Security and privacy analysis of cyber-physical systems, including opacity, differential privacy, non-interference and other related notions
- Fault diagnosis, intrusion detection, and attack mitigation of cyber-physical systems
- Supervisory control for safety of discrete-event systems
- Formal methods and reactive synthesis for safety of cyber-physical systems
- Data-driven verification and synthesis of cyber-physical systems
- Distributed approaches for large scale cyber-physical systems and hybrid systems
- Algorithms and tools for verification and synthesis of safety-critical systems
- Applications in security and/or safety of manufacturing systems, transportation systems, energy systems, robotic networks, telecommunications, and computer networks

Special issue "PID Control for Discrete-Event, Switched, and Hybrid Systems"

➢ **Journal:** International Journal of Robust and Nonlinear Control

➢ **Guest editors:** Dan Ma ; Silviu-Iulian Niculescu ; Lei Guo ; Jie Chen

➢ **Submission deadline:** Dec. 1, 2020

➢ **Submission website:** https://mc.manuscriptcentral.com/rnc-wiley

➢ **Main objective:** This special issue seeks to respond to the recent trends of PID control and aims to report recent analytical studies and practical applications, with a focus on the robustness, performance, optimization and analytical design.

Topics include (but not limited to)

- Robustness and fragility of PID control
- Performance and optimization of PID controllers
- Structural and improved PID control
- PID control for nonlinear systems
- PID control for distributed parameter systems
- PID control for discrete-event, switched, and hybrid systems
- Sampled-data/event-triggered PID control
- Distributed PID control over networks
- PID control design by data-driven methods
- PID control design by machine learning methods
- Applications of PID control

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Call for items to be included in the CSM TC report

- Periodically, a column about our TC's activities is published at IEEE Control Systems Magazine.

- Our next column is due end of Nov. 2020.

- If you have any items (events, schools, workshops, special sessions, books, special issues, awards, etc.) during the period May 2019 – Nov. 2020, please write to me. Even better if you have a photo.

- Finally, I wish that everyone stays healthy.

- These slides will also be made available on CSS website.

- If you have any questions, please write to me.

- Best wishes.