

CSS Technical Committee on Discrete Event Systems

Meeting @ CDC NICE

2019.12.11

Agenda

- General information about TC
- Activities 2019
- Activities 2020
- Discussions

CSS website

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

Technical Committee On Discrete Event Systems

NAVIGATION

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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

Membership

- Google group:

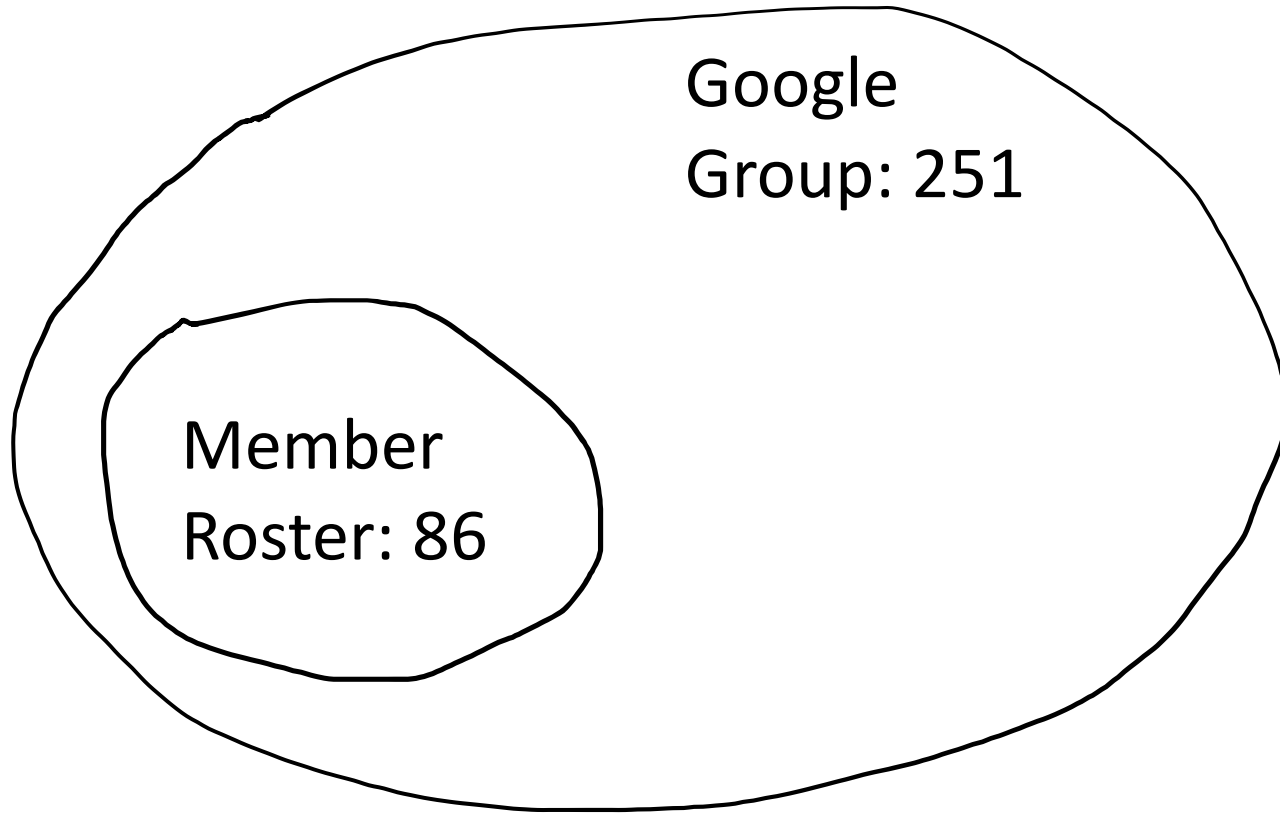
IEEE CSS Technical Committee on Discrete Event Systems

<https://groups.google.com/a/nd.edu/forum/?hl=en#!forum/csstcdes-list>

- Send an email to Kai Cai:

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

Membership



Submission to newsletter

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

Submission to newsletter

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

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Conference activities 2019

- ACC: one regular session
 - Regular session: Discrete Event Systems
 - Related invited session: Security and Privacy of Cyber-Physical Systems (Justin Ruths, Henrik Sandberg, David Umsonst)
- CCTA: one invited session + a few papers
 - Invited session: Control for Computing Systems (Eric Rutten, Arzen Karl-Erik)
 - 2 papers in regular session : Manufacturing Systems and Processes
 - Related invited session: Regulating Traffic in Smart Cities (Fumin Zhang, Rong Su, Samuel Jia)
 - Related workshop: Smart Cities: Connectivity, Mobility, and Trust (Samuel Jia, Rong Su, Fumin Zhang)

Conference activities 2019

- CASE: one special session
 - Special session: Supervision and Estimation of Automated Systems using Discrete-Event Systems (Xiang Yin, Yin Tong, Ziyue Ma, Zhou He)
- CoDIT: two special sessions
 - Formal Methods applied to Transportation and Industry 4.0 (Dimitri Lefebvre, Mariagrazia Dotoli, Achraf Jabeur Telmoudi)
 - Petri nets models for modeling, control and optimization (Patrice Bonhomme, Yin Tong, Cristian Mahulea, Dimitri Lefebvre)

Conference activities 2019

- CDC: two regular sessions + two invited sessions
 - Regular session: Supervisory Control
 - Regular session: Discrete Event Systems
 - Invited session: Cyber-Security of Discrete-Event Systems (Xiang Yin, Kai Cai, Rong Su, Yin Tong)
 - Invited session: Analysis and Control Methods to Improve Resilience of Discrete-Event Systems (Rong Su, Xiang Yin)

Journal activities 2019

- J-DEDS: journal special issues
 - **Smart Manufacturing** (Rong Su and Bengt Lennartson): under review (?)
 - **Theory-2020**: under review (?)
 - **Applications-2020**: under review (?)
 - **Smart Cities** (Samuel Jia, Mariagrazia Dotoli, Qianchuan Zhao): under review (?)

School activities 2019

- School

- 40th Summer School of Automatic Control, Grenoble,
[Control for Computing Systems](#) (Eric Rutten et. al.)

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- **Activities 2020**
- Discussions

Next year 2020

- IFAC WC: four invited tracks/sessions
 - Open invited track: [Supervisory Control Theory and Reactive Synthesis for Cyber Physical System Design](#) (Anne-Kathrin Schmuck, Kai Cai)
 - Open invited track: [Control for Computing Systems](#) (Eric Kerrigan, Eric Rutten)
 - Open invited track: [Control for Smart Cities](#) (Qingshan Jia, Mariagrazia Dotoli, Alessandra Parisio, Christos Cassandras, Andreas Malikopoulos)
 - Invited session: [Cyber-Security and Safety of Discrete Event Systems](#) (Xiang Yin, Kai Cai)

Next year 2020

- WODES
 - Special session: [Applications of DES](#) (Kai Cai, Eric Rutten)
 - Other special sessions (?)
 - School (?)

Next year 2020

- Plans for CCTA (Montreal) and CDC (Jeju Island)
 - Applications of DES
 - Cybersecurity
 - Supervisory Control and Formal methods
 - Other topics?

Point 1: topics to promote

- Anne-Kathrin Schmuck:

Connections with formal methods, reactive synthesis

- Xiang Yin:

Cyber-physical systems, cybersecurity

- Eric Rutten

Computing/software systems, applications of DES

- Machine learning? Data-driven? Other topics?

Point 2: collaborations with other TCs

- TC on Smart Cities
- TC on Hybrid Systems
- Japanese community:
Research committee on event-based control
- Chinese community:
Research committee on discrete event systems

Next year 2020

- Schools

- International Graduate School on Control, June 2020
[Introduction to Discrete Event Systems](#) (Stephane Lafortune, Christos Cassandras)
- Dagstuhl Seminar (to be proposed, topic on the connections of Supervisory Control and Formal Methods)

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Discussions

- Special issue for IEEE [Control Systems Magazine](#) (and other journals)?
 - Topics preferred: emerging topics within TC or across TCs
 - Benefit: visibility in the whole IEEE CSS

Responses from participants:

- Recent work at Eindhoven on applications of supervisory control to infrastructure systems, in particular waterlocks
- Applications of DES (automata models, boolean networks models) to biology (state-of-the-art?)

Discussions

- What **topics** you would like **to promote**?

Responses from participants:

- Learning (including or beyond model identification)
- Data-driven modeling and control
- Declarative programming
- TC mainly offers monthly newsletters and meetings, sessions at ACC/CDC. What **other things** you would like **TC to offer**?
- TC has **USD 2K annual budget** to sponsor events. You are welcome to write an event proposal (1-2 pages) describing the event and how to spend the money and providing brief rationale on why this event will benefit TC as well as CSS.

Thank you for attending this meeting.

20 Participants:

Anne Schmuck

Xiang Yin

Jan Komenda

Romelo Meira Goes

Yin Tong

Jiafeng Zhang

Jinglun Li

Shigemasa Takai

Toshimitsu Ushio

Sasinee Pruekprasert

Christos Cassandras

Ali Karimodini

Christoforos Hadjicostis

Jan van Schuppen

Jan Lunze

Jean-Jacques Lesage

Jean-Marc Faure

Francesco Basillio

Stephane Lafortune

Kai Cai

- TAB meeting tomorrow (Dec. 12)

Important updates will be communicated through mailing list

- Slides will be made available on CSS website