

# The 30<sup>th</sup> Chinese Control and Decision Conference

## GENERAL INFORMATION

The 30th Chinese Control and Decision Conference (2018 CCDC) was successfully held in Shenyang, China during June 9-11, 2018. CCDC was co-organized by Northeastern University, China and Technical Committee on Control and Decision of Cyber Physical Systems (TCCD-CPS), Chinese Association of Automation, China. The local organizer was College of Information Science and Engineering of Northeastern University, China. The conference was technically co-sponsored by IEEE Control Systems Society (CSS), Chinese Association for Artificial Intelligence (CAAI), Technical Committee on Control Theory of Chinese Association of Automation and State Key Laboratory of Synthetical Automation for Process Industries of Northeastern University.

## TECHNICAL PROGRAM

The 2018 CCDC received 1628 full paper submissions from authors of 13 countries and regions. After going through a rigorous reviewing process during which all the members in the Technical Program Committee worked professionally, timely, responsibly and diligently, 1232 papers were accepted and included in the technical program for presentation in 139 oral sessions and 9 interactive sessions in the conference. 1100 delegates attended the conference.

The 30th CCDC opening and CCDC 30th anniversary celebration ceremony hosted by Professor Guang-Hong Yang was held in the morning of 9 June, 2018. Numerous experts and scholars attended the ceremony. During the ceremony, speeches were delivered by representatives of organizers and technical co-sponsors, including the President of Northeastern University Professor Ji Zhao, the founder of CCDC Academician Zhang Si-Ying of Northeastern University, representative of the international advisory committee Academician Tianyou Chai of Northeastern University, the President of IEEE Control Systems Society Professor Francesco Bullo, Professor Fangchun Yang of Chinese Association for Artificial Intelligence, the representative of local organizers Professor Xiaoping Ma of China University of Mining and Technology, the Chair of International Technical Program Committee Professor Changyun Wen of Nanyang Technology University, and the General Chair Professor Fuli Wang of Northeastern University.

In addition to the normal technical sessions, the technical program also included 4 keynote addresses, a workshop and 8 distinguished lectures covering the state-of-the-art in both theory and applications in control, decision, automation, robotics and emerging technologies. The 4 keynotes were as follows:

1. “*On the dynamics of opinions and influence systems*” by Francesco Bullo,

- University of California, Santa Barbara, USA;
2. “*Nonlinear control without PDEs*” by Alessandro Astolfi, Imperial College London, UK;
  3. “*What is the connection between artificial speech and modern mathematics, and how can this be used in system identification and robust control?*” by Anders Lindquist, Shanghai Jiaotong University, China;
  4. “*Production, logistics and energy scheduling in steel industry*” by Lixin Tang, Northeastern University, China.

The workshop was conducted by F. L. Lewis of the University of Texas at Arlington and Northeastern University on “*New reinforcement learning structures for real-time optimal control and differential graphical games: Applications to HRI and industrial process control*”.

Distinguished lectures were delivered by Tingwen Huang of Texas A&M University at Qatar on “*Efficient computational approaches and their applications*”, Warren Dixon of University of Florida on “*Closed-loop control of man and machine: Insights from nonlinear, adaptive and switched system methods*”, Francesco Borrelli of University of California at Berkeley on “*Forecasts, uncertainty and control in autonomous systems*”, Daniel Ho of City University of Hong Kong on “*Recent development on distributed event-based network systems and information fusion estimation*”, Shaocheng Tong of Liaoning University of Technology on “*Adaptive fuzzy output feedback control for uncertain nonlinear systems*”, Shoudong Huang of University of Technology Sydney on “*Mobile robot simultaneous localization and mapping*”, Yong Zhao of Northeastern University on “*A novel integrated optical fiber sensor for temperature, pressure and flow measurement*”, Zidong Wang of Brunel University on “*Reproducibility in big data analysis: A bad data perspective*”.

All sessions, including keynotes, workshop, distinguished lectures, oral sessions and interactive sessions, were well attended and produced active discussions.

A USB flash disk, containing all the papers presented at the conference, was provided to each registered delegate. The papers written in English from the official conference proceedings will be published by IEEE and included in the IEEE Xplore Database.

## **AWARD CEREMONY**

The award ceremony of the "Zhang Si-Ying (CCDC) Outstanding Youth Paper Award", "Chinese Journal of Control and Decision 2017 Outstanding Paper Award" and "2018 Zhang Si-Ying Educational Fund Award" was held in the evening of 10 June, 2018.

The Zhang Si-Ying (CCDC) Outstanding Youth Paper Award serves to recognize Academician Zhang Si-Ying's highly-regarded perseverance, character and academic contribution. It also serves to inspire, motivate and encourage young scholars in their research. For a paper to be eligible for the award, the first author of the paper must not be older than 35 on the day of award presentation at the conference. The Zhang Si-Ying

(CCDC) Outstanding Youth Paper Award winner may receive an award of 10000 CNY together with a certificate, each of the remaining finalists receives an award of 3000 CNY and the Certificate of Finalist. The Award Committee for the 2018 CCDC was composed of the chair Professor Changyun Wen of Singapore and four members: Professor Francesco Bullo of USA, Professor Zhong-Ping Jiang of USA, Professor Xinhe Xu of China and Professor Guang-Hong Yang of China. For the 2018 CCDC, 62 papers were selected for consideration for the “Zhang Si-Ying Outstanding Youth Paper Award” based on reviewers’ comments, nominations, and the evaluations of the Technical Program Committee members. These papers were sent to famous experts including some members of the International Advisory Committee for further evaluation. Based on the evaluations and recommendation, the Technical Program Committee shortlisted the following five papers as the finalists for the Award:

1. *“Robust consensus of a class of heterogeneous nonlinear uncertain multi-agent systems subject to communication constraints”* by Maobin Lu and Lu Liu of City University of Hong Kong;
2. *“Bregman learning for generative adversarial networks”* by Jian Gao and Hamidou Tembine of New York University;
3. *“Necessary exponential stability conditions for linear discrete time-delay systems”* by Haifang Li, Ning Zhao and Xian Zhang of Heilongjiang University;
4. *“Immersion and invariance based composite adaptive control of nonlinear high-order systems”* by Zhen Liu, Ruyi Yuan, Guoliang Fan and Jianqiang Yi of Chinese Academy of Sciences;
5. *“FPGA-based sensorless control for PMSM drives using the stator/rotor frame extended Kalman filter”* by Zhixun Ma of Tongji University and Nanyang Technological University, Xin Zhang of Nanyang Technological University.

During the conference, all the Award Committee members attended the oral presentations of the 5 finalist papers. Each member independently assessed their originality, technical quality, and written and oral presentations. On the basis of these assessments, Paper 1 and paper 5 listed above won the 2018 CCDC Zhang Si-Ying Outstanding Youth Paper Award. Professor Zhong-Ping Jiang introduced the award selection criteria and process, Professor Changyun Wen presented certificates to all the finalists and Academician Zhang Si-Ying of Northeastern University presented the awards with certificates to the winners in the presentation ceremony.

## **The 31st CHINESE CONTROL AND DECISION CONFERENCE**

The 31st Chinese Control and Decision Conference (2019 CCDC) will be held in Nanchang, China, during 3-5 June, 2019. Keynote addresses on the state-of-the-art of the theories and applications in control and decision will be delivered by Robert Bitmead of University of California, San Diego, USA. The Organizing Committee will invite additional prominent professors/academicians as speakers of keynotes and distinguished lectures for the 2019 CCDC. Information for the 2019 CCDC will consistently be updated on the conference website: <http://www.ccdc.neu.edu.cn>.

International Technical Program Chairs

Changyun Wen,  
Zhong-Ping Jiang

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**Caption:** Delegates of 2018 CCDC at the opening ceremony



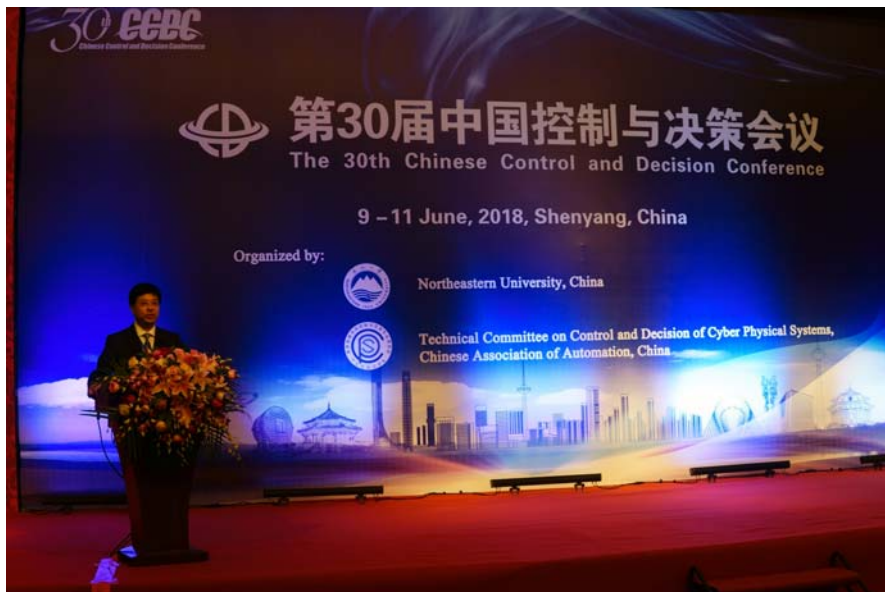
**Figure 2:** ccdc18\_ The 30th CCDC Opening and CCDC 30th Anniversary Celebration Ceremony

**Caption:** Professor Guang-Hong Yang, the General Chair of 2018 CCDC, chairing the ceremony



**Figure 3:** ccdc18\_ The 30th CCDC Opening and CCDC 30th Anniversary Celebration Ceremony

**Caption:** Professor Francesco Bullo, President of IEEE Control Systems Society, delivering his speech



**Figure 4:** ccdc18\_ The 30th CCDC Opening and CCDC 30th Anniversary Celebration Ceremony

**Caption:** Professor Changyun Wen, Chair of International Technical Program Committee, delivering a speech and reporting the technical program of 2018 CCDC





**Figure 5:** ccdc18\_ The 30th CCDC Opening and CCDC 30th Anniversary Celebration Ceremony

**Caption:** Professor Fuli Wang, the General Chair of 2018 CCDC, delivering his speech



**Figure 6:** ccdc18\_ coffee break

**Caption:** Academician Zhang Si-Ying and General Chair of 2018 CCDC Professor Fuli Wang



**Figure 7:** ccdc18\_Keynote Address Session \_Prof. Francesco Bullo

**Caption:** Professor Francesco Bullo delivering his keynote address



**Figure 8:** ccdc18\_Keynote Address Session \_Prof. Alessandro Astolfi

**Caption:** Professor Alessandro Astolfi delivering his keynote address





**Figure 9:** ccdc18\_Keynote Address Session \_Prof. Anders Lindquist

**Caption:** Professor Anders Lindquist delivering his keynote address



**Figure 10:** ccdc18\_Keynote Address Session \_Prof. Lixin Tang

**Caption:** General Chair of 2018 CCDC Professor Guang-Hong Yang presenting a certificate of appreciation to Professor Lixin Tang for delivering a keynote address



**Figures 11:** ccdc18\_Presentations by Finalists of Zhang Si-Ying Outstanding Youth Paper Award

**Caption:** The 2018 CCDC Award Committee assessing the oral presentations of the five finalists



**Figures 12:** ccdc18\_ Award Ceremony

**Caption:** Professor Zhong-Ping Jiang introducing the award selection criteria



**Figures 13:** ccdc18\_ Award Ceremony

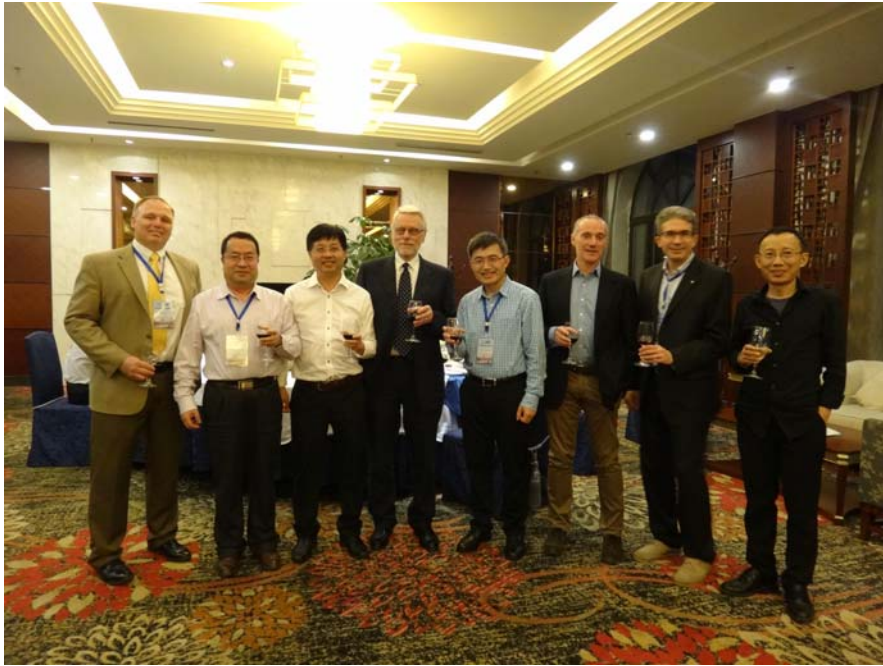
**Caption:** Academician Zhang Si-Ying, 2018 CCDC Award Committee members, winners and finalists in the presentation ceremony of the "Zhang Si-Ying Outstanding Youth Paper Award"



**Figures 14:** ccdc18\_ Award Ceremony

**Caption:** Some of the Organizing Committee members





**Figures 15:** ccdc18\_ VIP Dinner

**Caption:** Cheering the success of 2018 CCDC (from left): Professor Warren Dixon, Professor Guang-Hong Yang, Professor Changyun Wen, Professor Anders Lindquist, Professor Zhong-Ping Jiang, Professor Alessandro Astolfi, Professor Francesco Bullo, and Professor Jie Chen.