Other Events And Workshops

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EVENT REPORT

THE FIRST WEST LAKE WORKSHOP ON TARGET TRACKING AND INFORMATION FUSION, MAY 28–30, 2018, HANGZHOU, ZHEJIANG, CHINA

Nearly 100 participants from industry, research institutes, and academia from seven countries and four continents attended this event. The workshop was sponsored jointly by the Information Fusion Branch of Chinese Society of Aeronautics and Astronautics and the Hangzhou Dianzi University (HDU), and it was organized by the HDU School of Automation through the Overseas Expertise Introduction Center for Discipline Innovation (111 Center: the Programme of Introducing Talents of Discipline to Universities) in Perception and Control of Cyber-Physical Systems and the Fundamental Science on Communication Information Transmission and Fusion Technology Laboratory.

The workshop's key objective was to provide an open platform for academics, researchers, and practitioners to present the latest developments on a wide range of topics in target tracking and information fusion, as well as to trigger in-depth discussions on state-of-the-art concepts and the future of these fields. To foster international collaboration and to encourage student participation, this workshop was free of any registration fees. The technical program included 12 in-depth talks on various aspects of target tracking and information fusion given by prominent researchers from China and abroad. A panel discussion on a current topic of interest was also held at the end of each day to encourage open discussion and questions and to provide some vision to students about the trends in the future of tracking and fusion.

The workshop began with the opening remarks by Prof. Thia Kirubarajan from McMaster University, Canada, the general co-chair of the workshop. The remarks were followed by the welcome speech by Prof. Ning Zheng, vice president for International Cooperation at HDU, who set the tone for the workshop by quipping "data fusion is a 100 flowers growing together" to emphasize the need for innovation through collaboration. The first technical talk was by Dr. Roy Streit

Attendees of the workshop.

from the University of Massachusetts–Dartmouth, USA, on unifying multitarget tracking and high-level information fusion through analytic combinatorics. Next, Prof. Zhanshen Duan from Xi'an Jiaotong University, China, spoke about the analysis, design, and estimation of constrained dynamic systems. With an eye to the practical applications, Prof. Murat Efe from Ankara University, Turkey, and Prof. Baofeng Guo from HDU talked about data fusion for positioning and navigation and about hyperspectral band selection and image classification, respectively. Dr. Alfonso Farina, Italy, based on his vast experience in the field, talked about the trends in target tracking in view of recent advances in sensing and computing technologies. Dr. Ratnasingham Tharmarasa from McMaster University, Canada, then discussed the challenges in target tracking and information fusion with application to autonomous vehicles and intelligent transportation. The first day of the workshop concluded with a four-member panel discussion, titled "Predicting the Future of Target Tracking," hosted by the Prof. Kirubarajan, which discussed the various applications, theoretical frameworks, and the technological advances that are shaping up the field of target tracking.

The second day of the workshop began with a talk on computationally efficient multiple detection multitarget tracking algorithms by Prof. Taek Lyul Song from Hanyang University, South Korea. This was followed by a talk on state estimation with constraints by Prof. Gongjian Zhou from the Harbin Institute of Technology, China. Next, Prof. Johan Pieter de Villiers from the University of Pretoria, South Africa, talked about joint classification, association, tracking and behavioral analysis with application to counterpoaching, stock theft mitigation, and border surveillance. Then, Prof. Quanhua Liu from the Beijing Institute of Technology, China, talked about applying wideband radar for target detection and tracking. Dr. Eloi Bosse from Expertise Parafuse Inc., Canada, spoke about big data and Internet-of-Things for tracking and gating in a complex world of interconnections. He was followed by Prof. Feng Yang from Northwestern Polytechnical University, China, who spoke about target tracking based on random finite set

Talks and panel discussions: counterclockwise from the upper left, Thia Kirubarajan (general co-chair), Dongliang Peng (organizational chair), Roy Streit, Zhansheng Duan, Murat Efe, Baofeng Guo, Alfonso Farina, Yunfei Guo (organization team member), Ratnasingham Tharmarasa, Taek Lyul Song, Gongjian Zhou, Johan Pieter de Villiers, Quanhua Liu, Anke Xue (general co-chair), Eloi Bosse, and Feng Yang, along with the two panels in the middle.

and machine learning. Finally, a six-member panel discussion, titled "Tracking to Learn and Learning to Track," was held with a focus on the interplay between the emerging field of artificial intelligence and the traditional field of model-based target tracking.

Marco Polo once said, “Hangzhou is without a doubt the finest and most splendid city in the world.” The third day of the workshop was reserved for social activities along the West Lake and the surrounding hills in Hangzhou so that the visitors could validate Marco Polo’s observations.

The organizing team and volunteers from the Fundamental Science on Communication Information Transmission and Fusion Technology Laboratory at HDU deserve the appreciation of the participants for a finely organized event with generous financial support.

In view of the large audience for the event (about 100 participants), the deep discussions it offered, and potential collaborations it fostered, the First West Lake Workshop on Target Tracking and Information Fusion can be considered as a very fruitful event in advancing interest and the state-of-the-art concepts in these fields. On the basis of the success of this first workshop, the plan is to make it into a biennial event to sustain the effort and ensure the benefits of international collaboration. We welcome all interested researchers to participate in the Second West Lake Workshop on Target Tracking and Information Fusion planned for May 2020 in splendid Hangzhou.