Preface

CDVE2016 celebrated in a new continent – Australia, for the first time in the beautiful coast city Sydney. CDVE conferences have become more international and more global after being held in Asia and North America.

Our conferences are very international by having researchers from over 20 countries. This year, we had submissions from some new countries. We welcome the researchers from these countries to join our community.

Among papers this year, we saw a large amount of submissions from the field of cooperative visualization. As we can see, the cooperative visualization research has been very active in recent years. It has been applied to a very broad area of applications. We also find that the cooperative visualization is combined with other techniques such as virtual reality, augmented reality, which provides much more possibilities for better visualization. Applications include for work training, cooperative design using virtual reality, and augmented reality, but via small mobile devices and large-scale display walls. It also finds applications to increase the user experience, visual comprehension such as in disaster preparation, museum, and virtual tourism.

Originated from visualization and using it as a tool, visual analytics has achieved some higher-level analysis of big data and reached some interesting analytic results that have never been achieved before. There are papers analyzing student check-in data and other data such as consumption data to find out student behavior and its relationship with academic performances. There are papers for ranking authors by analyzing their co-authorship from social media and publications. To help to control the network security, visual analytics also finds its own way by visualizing and analyzing the network flow logs to show the communication patterns and network abnormalities. The communication network itself can also be visualized to show its structure.

In the field of cooperative engineering, a couple of papers discuss the new challenges in the networked and cloud manufacturing environment. The key issues discussed in the papers involve: how to model the manufacturing process cooperatively, how to cooperate but keep the enterprise's own information undisclosed, how to tell a network potential partner is trustful, how to choose proper resources from a service cloud etc. The papers present their own solutions and recommendations by analyzing the problems and designing prototypes to evaluate them.

Within the cooperative engineering and a special area of engineering, the construction industry, using BIM (Building Information Modeling), was a central topic for two papers. BIM has been a tool for sharing data through centralized or distributed platforms. Collaboration is not at the center of BIM. There are papers discussing how to make the BIM to be a collaborative platform so as to facilitate the collaboration among stake-holders.

In the field of cooperative design, crowd sourcing has been a concern of a few studies. There are papers comparing the Web-based crowd behavior with the experts.

The basic findings of these papers can be a base for broader use of crowd sourcing and group intelligence in the field of cooperative design.

In the field of cooperative applications, there are many applications such as cooperative learning using mobile devices, using cloud to share resources, using IOT for medical care, traffic congestion monitoring, network security ensuring, etc. Among the techniques used, ontology seems to be a strong tool in many application areas from cooperative manufacturing to patient caring.

The papers published in this volume reflect the progress in our field, which is a result of hard work and ongoing effort for better technological solutions. I would like to express my sincere thanks to all of the authors for submitting their paper to the CDVE 2016 conference and presenting their hard-earned research results.

I would like to thank all of our volunteer reviewers, Program Committee members, Organization Committee members for their continuous support to the conference. My special thanks go to my colleague, the Organization Committee Chair Dr. Tony Huang, and the two co-chairs. I would also like to thank the University of Tasmania for its support of this conference. The success of this year's conference would not have been possible without their generous support.

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