

Notes from the editor – CE can help to improve citizens life

(by Saraju P. Mohanty)

I bring this first issue of CEM in 2017 remembering Rick Doherty. As truly stated by Tom Coughlin *Consumer Electronics Lost One of its Best Chroniclers*. I greatly appreciate the time and effort of Associate Editor Tom Coughlin in helping to put this together in memory of Rick.

1. IEEE Panel of Conference Organizers (POCO) 2016, Montreal, Canada

For the benefit of the conference organizers, I briefly discuss recent IEEE Panel of Conference Organizers (POCO) which was held in Montreal, Canada during 28-30 July 2016 (<http://ieeepoco.org/>). POCO is the annual IEEE event for scholarly conference organizers around the world. If you are planning to organizing a conference or even involved in conferences on leadership role is suggested to attend POCO to learn the details of various aspects of conference organization including finance management and review process. The best practices of can be scholarly conference organization well-learned by attending POCO. The roles of 5 key members of a conference organizing committee is discussed by IEEE which are: General Chair, Finance Chair, Program Chair, Publication Chair, and Publicity Chair (https://www.ieee.org/conferences_events/conferences/organizers/roles_responsibilities.html). It was very interesting to learn during the POCO that conference Proceedings is the soul and the Program Chair is the brain of the conference. General chair is the overall in charge of the conference.



The IEEE Meetings, Conferences & Events (MCE) team at IEEE POCO 2016, Montreal.

2. Scholarly Publishing Options

I take this opportunity to discuss various forms of scholarly publishing. Researchers have options to publish in periodicals, meeting proceedings, and online depositories like (arXiv). The periodicals include journals, transactions, magazines, and letters. The periodical in general can be closed access, open access, or hybrid access. The periodicals can be published in printed form or electronically. The transactions/journal articles are well-mature specific research articles. Articles for letters have similarly focused research but of short version intended for quick dissemination. Magazine article should have the flavor of presenting research, news, state-of-art, technology to readers during a cup of coffee. The meeting proceedings which can be either electronic or printed form is moving in the direction of electronic only very fast. The meeting proceedings may present abstract, 2-page short paper, 4-page paper, or 6-page well done papers. Overall a cross-correlation between periodicals and meetings is the key for sustainable exchange of ideas, wider dissemination of scientific findings, and overall sustainable growth of the community. The quality of publishing is maintained by quality review process through an editorial board of periodicals or program committee of the meetings. At the secondary level ad-hoc reviewers are used to help the editorial board and program committee. Overall, the job of a reviewer is to be a gate keeper for the scholarly articles. While researchers consider impact factor is an indicator of quality of journal and acceptance ratio is an indicator of quality of conference, there are many other indicators of quality and it is quite difficult to comprehend the quality of a paper just from a publishing venue. However, it is my belief that an article that has substance will attract readers irrespective of venue and form of

publishing. Our CE magazine has a very strong editorial board which bring experts around the globe who are leaders in their areas in academia and industry. This issue presents the complete editor board to you with their brief bio.

3. Society News – General

DSE Guangzhou 2016 brought the best of Digital Senses to Guangzhou, China

The first International Digital Senses Conference & Expo (DSE) was held during 13-15 June 2016 at Guangzhou PWTC. The event best of experts and products in Virtual Reality (VR) and Augmented Reality (AR) with an attendance of 1641 for technical sessions and 9076 attendees for the exhibits.

Black Hat: Knowledge Resource for Cyber Security

A premier information security conference called "Black Hat" started in 1997. Security researchers, hackers, and industry get together at Black Hat to outline new vulnerabilities, latest threats, and demonstrate possible attacks.

4. Society News – Conferences

IEEE Consumer Electronics Society Sponsored Conferences

Consumer Electronics (CE) Society has come a long way in sponsoring various high-quality conferences. The CE society came to its existence in 1983 after formations of two societies, the IEEE Consumer Electronics Society and the IEEE Broadcast Technology Society from the original combined version. Approximately half a dozen conferences are sponsored by IEEE CE Society including the following: (1) IEEE International Conference on Consumer Electronics (ICCE), (2) IEEE International Conference on Consumer Electronics—Berlin (ICCE-Berlin), (3) IEEE International Conference on Consumer Electronics—Taiwan (ICCE-Taiwan), and (4) IEEE International Symposium on Consumer Electronics (ISCE). The readers are encouraged to participate in them. The readers are also encouraged to contact IEEE President and Vice-President Conference Activities in case they want to start new meeting which come under the scope of CE society.

IEEE International Symposium on Nanoelectronic and Information Systems (iNIS)

I bring iNIS to your attention. One of the objectives of iNIS is to provide a platform for both hardware and software researchers to interact under one umbrella for design of efficient and secure information processing electronics. Several tracks of iNIS including the following may be of interest to the CE community: (1) Hardware/Software for Internet of Things and Consumer Electronics (IoT), (2) Hardware/Software Solutions for Big Data (SBD), (3) Hardware for Secure Information Processing (SIP), and (4) Cyber Physical Systems and Social Networks (CSN).

Open Data Symposium

The Open Data Symposium was held on 1st September 2016 at the Osaka Congress & Convention Center, Japan.

The Internet of Things Symposium in Mumbai

The Internet of Things (IoT) Symposium was held during 3-4 August 2016. At Mumbai, India. The IoT Symposium is one of the events of Future Directions team on IoT of the IEEE CE Society.

5. Society News – Future Directions

Around the World in an Electric Vehicle

This article presents an interesting and adventurous journey of traveling around the globe using an electric vehicle in a span of 80 days.

Report of the IEEE Consumer Electronics Future Directions Committees

The future directions committee of CE society was formed to meet various objectives. This report presents a summary of various initiatives including: (1) Safe Advanced Mobile Power, (2) Transportation Electrification, (3) Cloud (and Fog) Computing Initiative, and (4) Consumer Internet of Things.

6. Society News – Chapter Events and Profiles

Keep in touch with your fellow CE Society members

One of the key benefits of being a member of IEEE CE Society is the opportunity to network with fellow members. This writeup presents the list of local chapters of CE society around the planet, and their contacts.

12,000 attendees visit Greece Chapter's booth at Science Exhibition

The IEEE CE Society Greece Chapter in collaboration with University of Thessaly and the local IEEE Student Branch co-organized an exhibition during 6-8 April 2016, Athens, Greece which was attended by 12,000 people.

7. Young Professionals

The Career Game Cheat Code: IEEE Young Professionals

Various young professional activities of IEEE have been reported in this article. For example, the IEEE Young Professionals team from the IEEE Circuits and Systems Society hosted a 2-hour panel during its flagship meeting IEEE International Symposium on Circuits and Systems 2016 at Montreal, Canada.

8. Articles – General

A Multi-Task Grocery Assist System for the Visually Impaired

I consider this article as the highest impact article of January 2017 issue even though the cover page is based on virtual/augment reality. This article presents interfaces, algorithms and hardware platforms to help the visually impaired people on grocery shopping. This CE research can have a potential impact on an estimated 285 million people who are visually impaired worldwide.

New Technologies for Human Robot Interaction and Neuroprosthetics

This article analyzes state-of-the art in neuroprosthetics and robotics research which lead to the development of new commercial products. The particular focus of this article is on the Brain Computer Interface linked to haptic systems, interactive robotics and autonomous systems.

Swing-Pay: A Digital Card Module using NFC and Biometric Authentication for Peer-to-Peer Payment

This article presents a module called Swing-Pay that can communicate using Near Field Communication (NFC) technology to transfer money from payer's bank to payee's bank by digital means. The Swing-Pay eliminates the need of physical cash and also serves all types of payment and identity needs.

The Resistive Memory Technology for Future Storage and Computing

This article presents resistive random access memory (ReRAM) which can replace currently used magnetic or flash memory in CE systems. The ReRAM is considered as an alternative nonvolatile memory technology which can have

high storage density, simple structure, low-energy consumption, and long endurance as compared to the currently used memory.

9. Regular Columns

Bits Vs. Electrons -- Site Insites

In this issue of Bits Vs. Electrons very good discussions on website protocols, contents, and development has been presented.

Storage Corner -- A Timeline for Flash Memory History

This issue of storage column presents an interesting historical discussions of flash memory which ranges from 1967 to 2016 has been presented.

Hardware Matters -- Hardware Security of CE Devices - Threat Models and Defence against IP Trojans and IP Piracy

The hardware matters column of this issues presents hardware security of CE devices or systems with an emphasis on threat models and defense mechanisms against attacks such as hardware Trojan and IP piracy.

Product Safety Perspectives -- Let's Talk Product Safety

In the current version of Product Safety Perspectives column, a detailed discussion on the Risk of Fire and how to prevent fire hazards from occurring has been presented.

CE Society TV -- High Efficiency Video coding (HEVC)

This column on CE Society TV discusses video presentation on High Efficiency Video coding (HEVC) from a list of videos appeared between September 22, 2012 to August 24, 2016.

Standards Corner -- Up-and-Coming Industry Connections and Standards Activities in the Consumer Electronics Field of Interest

This issue of standards corner presents four industrial connection activities which were sponsored by IEEE CE Society Standards Committee and IEEE Digital Senses Initiative.

Market Analysis Corner -- Toy Engineering

The history of toy electric trains has been briefly presented in this column starting from their inventions in 1900.

Publications Corner --

Discussions on various publications sponsored by CE society has been presented in this column.

CE Education and Outreach -- State of the Hardware Incubators and Accelerators in USA

This column on CE education and outreach briefly presents various hardware incubators and accelerators available in USA.

10. Socioeconomic Impact

Are smartphones ubiquitous? An in-depth survey of smartphone adoption by seniors

A detailed survey of smartphone adoption by seniors has been presented in this article which finds that seniors who do adopt smartphones typically use them as feature phones, and do not adopt various services.

World of Worry: Examining the dark side of World of Warcraft

This article discusses the impact of popular game World of Warcraft on the online gaming community which seems to have detrimental effects on real-life relationships by aggravating issues such as bullying and addiction.

Makers and Ham: Re-Purposing Consumer Electronics for Amateur Radio

This article presents discussions on the radio amateurs (hams) who make, hack, and repair radio and related items to use through their wireless communication hobby.

11. Special Section

Special Section on Virtual and Augmented Reality

The *special section of on Virtual and Augmented Reality is supported by IEEE Digital Senses Initiative* (<http://digitalsenses.ieee.org>). IEEE Digital Senses Initiative (DSI) is an IEEE-wide initiative launched by IEEE Technical Activities Board or IEEE Future Directions. IEEE through its Digital Senses Initiative is leading in advancing technologies that reproduce the stimuli of various senses including sight, hearing, touch, smell, and taste. Plans are underway to capture all the different perspectives via in-depth cross-disciplinary discussions, and to drive to a set of results which will facilitate disruptive innovations and foster cross-industry collaborations globally in three focus areas (virtual reality, augmented reality, human augmentation) and many other relevant areas (smart robots, wearables, and consumer healthcare). This Special Section presents a total of 4 articles to the readers.

Special Section on Mobile Edge Computing and Internet of Things for Consumers - Part - II

You had the Part-I of this Special Section in October 2016 issue of CE magazine, this is Part-II of it. A total of 3 articles have been presented in this Special Section related to MEC and IoT.

12. Product & Book Reviews

Multiple Consumer Electronics Product Review

This is of product review presents discussions on various products such as, Anonabox Pro, iHome Beauty, August's Doorbell Cam, August's Smart Lock, August's Smart Keypad, AmpliFi HD, Withings Body Cardio, and Withings Thermo.

Review of PROSE Award Winning Text, Nanoelectronic Mixed-Signal System Design

In this issue a review of a book which won PROSE award as best textbook in Physical Sciences and Mathematics from American Association of Publishers has been presented. The book presents example of several hardwares and hardware design methods which are used as components in CE.

Finally, I sincerely hope that this first issue of CE magazine for the year 2017 will be a very good reading for the CE as well as general readers. I look forward to your submissions to CE magazine. Please use the following link: <https://mc.manuscriptcentral.com/cemag>. More information on scope and formatting, editorial board has been presented at: <http://cesoc.ieee.org/publications/ce-magazine.html>. I wish you a wonderful new year 2017.