Video Cameras: An Omnipresent Consumer Electronics

By Saraju P. Mohanty

This issue of *IEEE Consumer Electronics Magazine* is dedicated to video cameras. Video cameras are nearly everywhere, including in TV studios, smartphones, doorbells, or even mounted on unmanned aerial vehicles. We trace the history of cameras, beginning with an all-electronics TV system, introduced in 1908, that used a cathode-ray tube for both imaging and display. Then various camera or imaging tubes, including iconoscopes, orthicon tubes, and vidicons, were used from time to time in the evolution of this high-impact technology. Next came charge-coupled devices and CMOS image sensors. CMOS image sensors made it possible for the cameras to be of any size, part of any device, and placed at any location. Monochrome and color cameras have been marketed, and the cameras have been both analog and digital. Of course, now digital cameras are replacing the analog cameras more or less in all applications. The cameras can be of different resolutions and quality. Along with digital cameras, video-compression technology has been evolving as well to meet the constraints for storage/memory cost and transmission bandwidth.

AWARDS

I congratulate the winners of the various recent awards presented by the IEEE Consumer Electronics (CE) Society.

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IBUKA AWARD FOR 2019

The 2019 Ibuka Award was presented to Tomonori Aoyama and Takashi Hayasaka for pioneering contributions in superhigh-definition image technologies leading to 4K digital cinema and television.

CE SOCIETY FELLOWS FOR 2019

The following are the 2019 IEEE Fellows from the CE Society:

▼ Wen-chung Kao, for leadership in the development of electrophoretic display technology
▼ Seishi Takamura, for application of video coding.

CE SOCIETY OUTSTANDING SERVICE AWARD FOR 2019

The 2019 CE Society Outstanding Service Award was conferred to Michael Isnardi for contributions to a broad range of important activities in the CE Society, including awards committees, Advanced Television Systems Committee representation, and International Conference on CE (ICCE) technical reviews.

IEEE CONSUMER ELECTRONICS MAGAZINE BEST PAPER AWARDS FOR 2018

The following Best Paper Awards were presented for 2018 for *IEEE Consumer Electronics Magazine*:

▼ *First Prize*: "The Blockchain as a Decentralized Security Framework," by Deepak Puthal, Nisha Malik, Saraju P. Mohanty, Elias Kougianos, and Chi Yang, March 2018
▼ *Second Prize*: "Everything You Wanted to Know About the Blockchain: Its Promise, Components, Processes, and Problems," by Deepak Puthal, Nisha Malik, Saraju P. Mohanty, Elias Kougianos, and Gautam Das, July 2018
▼ *Third Prize*: "Intellectual Property-Based Lossless Image Compression for Camera Systems," by Anirban Sengupta and Dipanjan Roy, January 2018.

IEEE TRANSACTIONS ON CONSUMER ELECTRONICS BEST PAPER AWARDS FOR 2019

The *IEEE Transactions on Consumer Electronics* Best Paper Awards were given as follows:

▼ *First Prize*: "A Novel 2D to 3D Video Conversion System Based on a Machine Learning Approach," by José L. Herrera, Carlos R. del-Blanco, and Narciso García, November 2016
▼ *Second Prize*: "Fast Scene Analysis for Surveillance & Video Databases," by Solmaz Javanbakhti, Sveta Zinger, and Peter H.N. de With, August 2017
▼ *Third Prize*: "A Computation and Energy Reduction Technique for HEVC Intra Prediction," by Hasan Azgin, Ercan Kalali, and Ilker Hamzaoglu, February 2017.

LOOKING FORWARD
I hope this issue with its theme of video helps a wider set of the CE community to advance its knowledge. I am working with our dedicated editorial board and worldwide researchers for more themes on the latest hot topics to be covered in future issues of *IEEE Consumer Electronics Magazine.*

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