Computer Highlights Society Magazines

The IEEE Computer Society’s lineup of 13 peer-reviewed technical magazines covers cutting-edge topics in computing, including scientific applications, Internet computing, machine intelligence, pervasive computing, security and privacy, digital graphics, cloud computing, and computer history. Here, we highlight recent issues of other Computer Society magazines.

**Software**

The next generation of software-intensive systems will be taught instead of programmed. This poses considerable pragmatic challenges in how practitioners develop, deliver, and evolve them, according to Grady Booch in “It Is Cold. And Lonely,” from IEEE Software’s May/June 2016 issue.

**Cloud Computing**

The Internet of Things (IoT) has helped advance the goal of getting all devices connected online and providing smart environments worldwide. However, many smart devices’ scarce computational capabilities cause concern about their ability to provide the necessary security. IEEE Cloud Computing’s March/April 2016 issue provides a platform for academia and industry to share their contributions to a secure and dependable IoT in collaboration with resource-rich cloud infrastructures.

**Computing**

Future high-performance computing centers will expand their roles as service providers. As their machines scale up, so will the sizes of the communities they serve. In the process, the facilities will have to focus on meeting their users’ needs as much as on operating machines reliably. The authors of “Expanding the Scope of High-Performance Computing Facilities,” from CiSE’s May/June 2016 issue, present five interrelated topic areas that are essential to expanding the value the centers provide to those performing computational science.

**Internet Computing**

IEEE Internet Computing’s May/June 2016 special issue surveys cloud storage–related topics and challenges including software-defined object storage, hybrid hard-drive/solid-state-drive object stores in the cloud, proactive disk-scheduling quality of service in cloud environments, and coordinating storage across multiple file-synchronization services.

**Security & Privacy**

Users are increasingly adopting traditional and innovative security measures to protect valuable cyberinformation. In the process, new participants are emerging alongside traditional ones. In light of these developments, IEEE S&P’s May/June 2016 special issue discusses how interaction approaches, business models, and organizational practices relate to cybersecurity economics.

**Computer Graphics**

The healthcare industry’s widespread digitization is reshaping one of the world’s largest economic sectors. This transformation is helping doctors, researchers, and patients. Given the scale and complexity of the data involved, advanced visualization tools have the potential to play a critical role in this process, as discussed in “Data-Driven Healthcare: Challenges and Opportunities for Interactive Visualization,” from IEEE CG&A’s May/June 2016 issue.

**MultiMedia**

In “Understanding Multimedia,” from IEEE MultiMedia’s April–June 2016 issue, magazine editor in chief Yong Rui reflects on how much AI and multimedia technologies have advanced in the past 60 years. For example, he discusses the progress made in understanding visual media and the challenges that lie ahead for video-to-text technology.
IEEE Intelligent Systems’ May/June 2016 special issue is the second part of a series on pattern recognition. This issue reports on advances in pattern recognition for visual data. The articles address topics such as visual categorization by cross-domain dictionary learning, facial-expression recognition, matching photos to facial sketches, measuring heartbeat rates from facial videos, driver gaze estimation, and nighttime vehicle detection.

The articles in IEEE Annals’ April–June special issue on the history of computing in East Asia cover real-world computing implementations and applications in the region. The topics include the COMTRAC (computer-aided train traffic control) system that has run the high-speed, high-frequency operations of Japan’s Tokaido Shinkansen railway since 1972; and Korean officials’ controversial effort from 1987 to 1995 to standardize the digital representation of their language’s characters.

Interest is increasing in mobile personal health technologies. To help designers make informed and well-articulated design decisions, the authors of “The Personal Health Technology Design Space,” from IEEE Pervasive Computing’s April–June 2016 issue, propose an approach comprising 10 dimensions related to the design of data-sampling strategies, visualization and feedback approaches, treatment models, and regulatory constraints.

IT’s importance in healthcare continues to grow, driven by disruptive changes including financial pressures, an aging population, the spread of connectivity and mobile technology, and medical advances. These changes demand improvements in health IT. IT Pro’s May/June 2016 special issue on IT trends in healthcare discusses some of the most recent developments in this area.