

2017–2018 Editorial Calendar

Energy-Efficient Data Centers (July/Aug 2017)

The advent of mega-scale Internet services and public cloud offerings led to a redesign of data center architectures, which addressed key inefficiencies, particularly in electrical and mechanical infrastructure. At the same time, the accelerated need for efficient servers spurred a generation of research on CPU, memory, network, and storage power-management techniques, which has led to a marked improvement in server efficiency and energy proportionality. However, it's time for a second, holistic, clean-slate redesign of the data center, encompassing new server architectures, heterogeneous computing platforms, radical networking paradigms, new mechanical and electrical designs, intelligent cluster management, and radically rethinking software architectures while considering changing use patterns.

5G (Sept/Oct 2017)

The past two decades have witnessed phenomenal progress in wireless access to the Internet and telecommunication services from mobile devices. The fifth generation – 5G – is the umbrella term for the next generation of cellular network technologies to be deployed in the 2020 time frame. The 5G umbrella includes advances on several different fronts, all of which are required for vendors and mobile network operators to meet market demands with cost-effective deployments. This special issue will provide comprehensive and timely updates on 5G radio and network technologies.

Agents for Social Media (Nov/Dec 2017)

While most current social media is intended for sharing content, future social media applications could offer models for other forms of interactions, including business and government. Such models could make use of agents that form teams, partnerships, and communities, foster communications, and collaborate to formulate policies and reach decisions. To realize these new forms, this special issue will address some of the underlying computational challenges.

IoT-Enhanced Human Experience (Jan/Feb 2018)

Internet of Things (IoT)-enabled applications now support the needs and interests of individuals, enterprises, and society. They impact lives, change businesses, and enhance the human experience. This special issue will focus on applications that are deployed and preferably tested and evaluated in real-world situations, where IoT data is an indispensable component. Apart from physical devices (sensors/IoTs), such applications might also involve citizen sensing (for example, human-supplied observations or data using a mobile app), social data, and interactions with humans; the applications might also seek or use human guidance.

Healthcare Informatics and Privacy (March/April 2018)

The digital transformation of healthcare on the Internet has been rapid and explosive. The Internet has enabled transfer and communication of healthcare data but also enabled delivery of healthcare services and apps, connecting patients and healthcare providers together. This special issue will address theoretical and applied research related to the privacy, security, and compliance of Internet-specific healthcare data, transactions, apps, services, and systems.