From the Editors

IT Pro 2017:
A Look Ahead

San Murugesan, BRITE Professional Services

Welcome to IT Pro 2017! This year, as in previous years, we'll continue to offer useful information on various topics of current interest, trace advances in IT and discuss their effect on our work and lives, and address IT challenges and risks. We'll delight you with application-oriented feature articles of interest to you, our various departments discussing current issues and challenges, and research articles of practical relevance.

I thank everyone who has contributed to IT Pro's success and prominence—the readers, authors, reviewers, editorial and advisory board members, and editorial and production staff. In 2017 and beyond, I look forward to your continued contributions and support to advance IT Pro to greater heights and further enrich its value to you.

Before I provide you with a glimpse of what's in store this year, let me fill you in on what we offered last year. (You can access our past issues from IEEE Xplore and the IEEE Computer Society digital library).

A Look Back at 2016

Last year, each of our six issues focused on a specific theme that interested you: cyberspace and energy management, IT governance and management, IT trends in healthcare, IT in smart cities, cybersecurity and privacy, and digital innovation and transformation. In addition to 33 feature articles on these themes and other topics, and four guest editors' introductions, we presented 31 timely articles in our departments—Data Analytics, From the Editors, Life in the C-Suite, IT and Future Employment, IT in Emerging Markets, IT Trends, Mastermind, Securing IT, and Spotlight. We also presented expert perspectives (as videos and articles). Our theme issues and selected articles were highlighted in Computing Now, Computing Edge, and social media, bringing them to the attention of a wider audience.

Furthermore, to engage with IT practitioners and facilitate closer interaction among them, we collaborated with international and regional conferences and symposia relevant to IT professionals and managers. We organized and conducted the second IT in Practice (ITiP) Symposium as part of the 40th IEEE Computer Society International Conference on Computers, Software & Applications (COMPSAC 2016) in Atlanta.

What Awaits You This Year

As an IT professional, you must stay abreast of advances in IT, emerging novel applications, new challenges and issues facing IT, and new opportunities that arise. You're also expected to develop creative, IT-enabled solutions that harness ongoing advances and trends in IT to address real problems facing society. You must satisfactorily address challenges facing IT systems and applications; uphold your professional, social, and ethical responsibilities; and work collaboratively with other professionals, managers, and colleagues. And you should always be looking toward the future and points of potential disruption.

In 2017, IT Pro will continue to be of value to you in meeting these demands and expectations and in succeeding as a reputable IT professional.

This year's issues will focus on specific themes of current relevance, including embracing IT, mobile data analytics, cognitive computing, establishing trust in the Internet of Things (IoT), and graph databases and their applications. In addition to peer-reviewed articles on these topics, we'll also feature articles that address topics of general interest and continue to offer timely, insightful articles in our department line-up.

We'll also publish expert perspectives. To serve you better, we've given a facelift to our editorial team (see the “Editorial Board Updates” sidebar).
In This Issue

In addition to department articles on interesting topics such as superintelligence, the growing role of the chief data officer, and the relationship between automation and unemployment, this issue presents six features focused on various subjects.

“Technologies for 5G Networks: Challenges and Opportunities,” by Naser Al-Falahy and Omar Y. Alani, describes 5G network features and opportunities, outlines potential technologies that could define the mobile network standard in the upcoming years, discusses challenges that arise in research and design of the network, and poses related research questions.

In “Mobile DNUN: Danger Notification and User Navigation,” Karthik Reddy Nalla and Hosam El-Ocla present their DNUN mobile application, which lets users send a danger notification to one or more preregistered contacts through multicast or broadcast communications, along with the sender’s current geographical location derived through the geolocation process. It also lets users mark the position of an object for later location, as with a car in a crowded parking lot.

The third article is “IT-Enabled Support for Anesthesia Preoperative Evaluation Clinics,” by Shu-Man Chang and colleagues. While most anesthesia information management systems store and display primarily patient records, this clinical procedure system—based on medical guidelines and risk estimation—assesses risk factors in anesthetic care plans and thereby helps anesthetists and physicians make informed decisions.

Today, in several applications, a large volume of data needs to be acquired, stored, shared, processed, and analyzed. To cater to this need, the Hadoop framework was proposed and widely adopted. However, Hadoop, which has dominated the big data processing world for nearly a decade, suffers from a few limitations. Hence, new big data processing stacks such as Spark and Flink, enhanced...
with special features, have been proposed. “Big Data Processing Stacks,” by Sherif Sakr, provides a good overview and comparison of the big data processing stacks and guides the choice of an appropriate stack for a given application.

Because it offers economic and other significant values, many organizations are now adopting open source software (OSS), treating it as a strategic asset. “Open Source Software Adoption: Lessons from Linux in Munich,” by Mario Silic and Andrea Back, presents a helpful case study on adoption of OSS by the city of Munich. The authors briefly discuss the challenges faced, and offer recommendations for OSS adoption.

Today, CIOs are required to be responsible not merely for operational continuity but also for IT-driven strategies that blend IS/IT innovations with business strategies to generate competitive advantage. These are strategic CIOs. Ariel La Paz’s “How to Become a Strategist CIO,” beginning with a review of how the CIO role has been shifting over time, discusses what a strategic CIO does and provides guidance on how to become a strategic CIO.

**ITiP Symposium**

Continuing our efforts to engage with IT practitioners and facilitate closer interaction among them, *IT Pro* is partnering with COMPSAC to cosponsor and organize the third symposium in the ITiP series in July of this year in Turino, Italy (www.compsac.org). We solicit your contributions and participation.

**We Welcome Your Contributions**

*IT Pro* covers the entire spectrum of an IT professional’s interests—technologies, applications, strategies, case studies, best practices, issues and challenges, and IT’s value proposition. We publish a mix of relevant, high-quality, peer-reviewed feature articles; short department articles; hot-topic spotlight articles; and perspectives and opinion pieces. You can contribute to *IT Pro* in the following ways:

- Feature articles—you can submit quality articles (approximately 4,200 words) for theme issues or on topics of general interest, which will be subjected to peer review. For author guidelines and calls for theme issues, see www.computer.org/itpro.
- Department articles—you can submit short articles (approximately 1,500 words) suitable for any of the departments to the respective editor or the editor in chief (for contact information, see http://bitly.com/itpro-edboard).
- Reviewer—if you would like to serve as a reviewer, email your bio and details of your reviewing credentials to San Murugesan, editor in chief, at san@computer.org.
- Special issue proposal—we invite your proposals for our upcoming issues. If you would like to see a topic of relevance covered or wish to guest edit a theme issue, send your proposal to san@computer.org.

We look forward to your active contributions and participation. Send your queries to san@computer.org.

**Reference**


San Murugesan is the director of BRITE Professional Services and an adjunct professor at Western Sydney University, Australia. His areas of interest include cloud computing, the Internet of Things, green IT, and IT applications. Murugesan is the editor in chief of *IT Professional* and co-editor of the Encyclopedia of Cloud Computing (Wiley, 2016); serves on the editorial boards of *Computer, IEEE Transactions on Cloud Computing, and The Institute; and edits Computer’s bimonthly column, Cloud Cover. He is a fellow of the Australian Computer Society and the Institution of Electronics and Telecommunication Engineers (IETE). Contact him at san@computer.org; http://bitly.com/sanprofile.

---

**Erratum**

In the November/December 2016 issue of *IT Professional*, for the article “Semantic Learning-Based Innovation Framework for Social Media” (pp. 26–32), author Frederik von Briel’s name was misspelled on the article’s first page and in the Table of Contents. We deeply regret the error.