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IEEE Future Directions Newsletter



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Technology Policy and Ethics

IEEE Future Directions considers the reflection of technology through the lens of social implications a key tenet of our work as we incubate and promote technologies. We are seeking submissions of original content, short articles of 800-1200 words on the social implications of technology, including but not limited to policy and ethics topics. If interested please email FDPolicyEthics@ieee.org.

Achieving Better Platform Quality

by Mark W. Olson

Value added developers are highly dependent upon the quality and security of the platform on which they build. As a developer of an automotive IoT product, I am concerned about the potential liability I may share with the platform vendor should our devices get hacked and damages are incurred. Platform vendors do not publish objective metrics about the quality of their software, making it impossible to gauge baseline quality and subsequent improvements. By definition, security holes are bugs, and many product bugs are security holes. Conversely, testing only shows the presence of bugs, but not the absence of bugs. As a result, it can be difficult to prove the quality level of any product. Based upon the number of updates and the many reported successful hacking incidents, there is likely significant room for the improvement of quality and security of today's software products.

[Read more.](#)

Mobile-Assisted Data Collection for Effective Policymaking

by Sridhar Vedachalam, Alec Shannon and Kellogg J Schwab

An estimated 2.4 billion people lack access to an improved sanitation option, while nearly 1 billion people lack access to improved water. Lack of access to adequate water, sanitation and hygiene (WASH) is a leading cause of diarrheal illness,

IEEE Future Directions Communities



intestinal worm infections and poor nutritional status in developing countries. The annual reporting of WASH statistics was made possible when the United Nations established the Millennium Development Goals (MDGs) in 2000 to address a series of interconnected issues including poverty, health, sanitation and education. Reports based on the MDGs have constituted some of the most important global development policy tools used to set national priorities for WASH, and the data collected as part of that effort remains the officially cited source on water and sanitation access in much of the world.

[Read more.](#)

IEEE Future Directions Initiatives Report on New Developments

IEEE Future Directions initiatives are creating opportunities to advance next-generation technologies. On 21 June 2017, representatives from Future Directions initiatives came together at the IEEE Meeting Series in New Brunswick, NJ, USA. They discussed accomplishments, ongoing activities, and plans to grow their cutting-edge initiatives, which currently have a combined +31,000 members. Among their top priorities were efforts to build cross-collaboration with other initiatives and IEEE organizational units, create and expand educational programs, build industrial connections, foster engaging student activities, and produce groundbreaking standards.

[Read more](#) for a summary of reports from each representative.

IEEE Future Directions Committee Industrial Advisory Board (IAB) Report

At the June 2017 Future Directions meeting series, Roberto Saracco, Head of the Industrial Doctoral School of EIT Digital, gave a report on behalf of the Industry Advisory Board. Based on input from industry experts, the presentation outlined the future technologies that are most important to industry and identified the roles that the IEEE might play in advancing those technologies. Among the topics discussed, 3D Printing and In Memory Computing were identified as having high industry relevance. Roberto included feedback from industry near the end of the presentation, describing how it is important for IEEE to focus on the present in addition to the future. Roberto outlined deliverables that were deemed to be the most relevant to industry including tables of standards, industry landscapes, and technology roadmaps.

[View the full presentation.](#)

Current Activities in our Technical Communities

IEEE 5G:

Call for Papers - IEEE 5G World Forum (5GWF'18) - 9-11 July 2018

The 2018 IEEE 1st 5G World Forum (5GWF'18) in Santa Clara, California, seeks contributions on how to nurture and cultivate 5G technologies and applications for the



benefit of society. [Click here](#) for the online Call for Papers.

[Visit the portal.](#)

IEEE Cloud Computing:

IEEE Cloud Computing magazine has an open Call for Papers for a special issue on Cloud Reliability. The goal of this special issue is to seek original articles that examine the state of the art and highlight best practices aiming to achieve high availability of online services at internet scale. For more information, please visit [here](#).

[Visit the portal.](#)

IEEE Cybersecurity:

The IEEE Cybersecurity Initiative is excited to announce the opening of the competition for two new awards:

- The IEEE Cybersecurity Award for Practice
- The IEEE Cybersecurity Award for Innovation

These awards will recognize individuals who have generated transformative cybersecurity capabilities and concepts. More information and full entry form can be found [here](#).

[Visit the portal.](#)

IEEE Digital Senses:

[Sign up](#) for the latest information on Digital Senses.

[Visit the portal.](#)

IEEE Life Sciences:

The IEEE Life Sciences Conference will focus on multi-society perspectives on personalized healthcare and wearables. It will take place in Sydney, Australia 13-15 December 2017. [Learn more](#).

[Visit the portal](#)

IEEE Smart Grid:

Check out this latest [Q&A about Financial Transmission and Storage Rights](#) with Josh Taylor, assistant professor of Electrical and Computer Engineering and the Associate Director of the Institute for Sustainable Energy at the University of Toronto.

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IEEE Transportation Electrification:

Read the current issue of the [IEEE Transportation Electrification eNewsletter](#) featuring the following articles:

- NASA Electric Aircraft Testbed (NEAT) Overview
- Electric Transportation and Community Solar - A Worthy but Complex Multi-Agency Initiative
- Virtual Synchronous Converter Based Motor Drives for Future Electric Vehicles

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IEEE Internet of Things:

With its dispersed population, cultural diversity, vast area, varied geography, climate extremes, importance to world ecosystems, and a richness of natural resources,

Alaska is uniquely positioned to explore the potential and challenges facing the Internet of Things (IoT) in its quest to create sustainable value. To facilitate this exploration in a global context, the IEEE IoT Multi-Society Technical Group is bringing together experts and stakeholders from industry, the public sector, and the research and academic communities to Anchorage for a Summit from 18-20 September 2017. More information on this exciting event can be found at our [website](#).

[Visit the portal.](#)

IEEE Software Defined Networks:

The 3rd IEEE Conference on Network Softwarization (IEEE NetSoft 2017) was held 3-7 July 2017 in Bologna, Italy. The event was a resounding success with subject matter experts and vendors from around the globe attending. NetSoft has become the leading event concerning the fundamental technology components and systems for SDN-NFV infrastructures and clouds-edges architecture. Please closely monitor the IEEE SDN Website about news regarding NetSoft 2018 to be held in Montreal, Canada.

[Visit the portal.](#)

IEEE Smart Cities:

IEEE Smart Cities has recently transitioned from Future Directions to under the administration of the Power & Energy Society, with five other partner organizational units. The purpose of IEEE Smart Cities: (1) To be recognized as the authoritative voice and lead in source of credible technical information and educational content within the scope of smart cities, and (2) To facilitate and promote both the collaborative and individual work of its Member Societies regarding smart city technology. The creation of technical information and educational content will be done via committee work in the areas of Education, Policy Technical Support, Technical Activities, Publications and R&D. If you are interested in joining one of the six committees of the IEEE Smart Cities Initiative, please email the Senior Program Manager Angelique Rajske Parashis at a.ajske@ieee.org.

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IEEE Big Data:

IEEE has launched a one-of-a-kind online resource called IEEE DataPort designed to make storage of datasets easier, provide access to valuable datasets across a broad scope of topics, facilitate analysis of datasets, and retain referenceable data for reproducible research. As a new industry resource, IEEE DataPort is an easily accessible repository of datasets, including Big Data datasets and data analysis tools. Our latest podcast episode features Dr. K. J. Ray Liu, the lead for IEEE DataPort. Listen to the podcast [here](#).

[Visit the portal.](#)

IEEE Rebooting Computing:

IEEE Rebooting Computing Week will take place 6-10 November 2017 in Washington, D.C., USA. Join IEEE as we convene great thinkers around the discussion of what we should expect as we enter a new era of computing. Hear from trailblazers in hardware, software, low energy, and high performance computing. [Read more.](#)

[Visit the portal.](#)

IEEE Green ICT:

The upcoming Greening through ICT Summit will examine opportunities in which information and communications technology (ICT) is used as a tool to improve

environmental and societal functions, and where it improves the energy efficiency, carbon footprint and life cycle management of ICT itself. The Summit, to be held on 3 October 2017 in Paris, aims to identify the combination of key technological, commercial and public policy challenges that must be overcome to achieve sustainability in our increasingly connected world. More information about this compelling gathering can be found at our [website](#).

[Visit the portal](#).

IEEE Brain:

A [tentative agenda](#) for IEEE Brain SENSORS Workshop is now available. This one-day collaborative workshop on "sensing the brain" will take place 2 November 2017 in Glasgow, Scotland, immediately following the IEEE SENSORS 2017 Conference. Several technology speakers will provide short presentations in the morning to set the stage for breakout sessions in the afternoon where participants will identify challenges and explore solutions. The outcomes of this one-day workshop will be included in a future IEEE publication.

[Visit the portal](#).

IEEE Future Directions Events

[IEEE 5G Webinar: 5G mmWave Revolution and New Radio](#)

20 September 2017, 11am EST

Speaker: Amitava Ghosh, Nokia Fellow and Head of Small Cell Research, Nokia Bell Labs

[IEEE Secure Development Conference \(IEEE SecDev\)](#)

24-26 September 2017, Cambridge, MA, USA

[Greening through ICT Summit \(GtICT\)](#)

3 October 2017, Paris, France

[IEEE Rebooting Computing Week](#)

Kicks off with the [International Roadmap for Devices and Systems \(IRDS\) Workshop](#) scheduled for 6-7 November 2017, followed by the [IEEE International Conference on Rebooting Computing](#) (ICRC) to be held 8-9 November 2017, and then concludes with the [Industry Summit on the Future of Computing](#) on 10 November 2017. All of the IEEE Rebooting Computing Week events will be held at The Ritz-Carlton Hotel in McLean, VA, USA.

[IEEE Life Sciences Conference](#)

13-15 December 2017, Sydney, Australia

Submission/Subscribe Information

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