



# IEEE Future Directions Newsletter



ISSUE 29 | January 2021

## In this Issue:

- Welcome from IEEE Future Directions Chair
- IEEE Future Directions Community on IEEE Collabratec
- Technology, Policy and Ethics
- Current Activities in our Technical Communities
- IEEE Future Directions Events

## Welcome from IEEE Future Directions Chair

Greetings to the IEEE Future Directions community and welcome to 2021! I am humbled and energized to lead such a distinguished group of technologists. Our leadership team consists of our experienced volunteers, Steve Diamond, *Vice-Chair*, Roberto Saracco, *Industrial Liaison*, and Rakesh Kumar, *Technology Roadmaps*, and a strong staff.

What does 2021 hold for Future Directions? We plan to work on increasing the value of our Technical Communities associated with our Initiatives. These include Blockchain, Digital Reality, Future Networks, Quantum, and more.

In 2021 we plan to "Fail Often." You might be surprised by that comment, but I believe that we have to fail to learn and succeed. Therefore, you should see a lot more projects in the pre-initiative state to see if they have a viable idea and therefore a lot more ways for you to get involved.

We are continuing our Ad Hoc for our signature conference and we changed the name to *Future Technologies Forum*. The Ad Hoc has big dreams: We want to hold a World Technology Forum similar to the World Economic Forum but for technology. We also have other events planned such as informal roundtables that are virtual to our theater-like events called IEEE Enlightening - short lightning talks.

Are you interested in contributing to Future Directions? Let me list the ways:

1. Do you have an idea for an Initiative/Project or a future technology that is going to change the world? Can you recommend experts that we recruit, both inside and outside IEEE?
2. Do you want to contribute to our events? Consider joining the Future Technology Forum. You don't have to be a Future Directions Committee member to join.
3. [Take a look at our many initiatives and volunteer your expertise!](#)
4. Get nominated to serve on the Future Directions Committee. Nominations are made at the end of each year. Involvement with 1-3 provides a better chance of getting selected.

If you have any questions or are interested in getting involved, reach out to [ieee-fd@ieee.org](mailto:ieee-fd@ieee.org).

I hope to meet you all in 2021!

Chris Miyachi  
Chair, IEEE Future Directions Committee

---

## IEEE Future Directions Community on IEEE Collabratec

The new IEEE Future Directions Community on IEEE Collabratec provides a space to share relative events, articles, volunteer opportunities, and more from all current and graduated Future Directions initiatives. Join now to share your ideas and get more involved! [Visit the community](#) to get started.

---

## Technology Policy and Ethics

[IEEE Future Directions Technology, Policy and Ethics](#) publishes articles addressing issues in current and future technologies, including the social and ethical considerations. We are currently seeking submissions of original content, articles of 800-1200 words on the implications of technology, including but not limited to policy and ethics topics. If interested, please email [FDPolicyEthics@ieee.org](mailto:FDPolicyEthics@ieee.org). Learn more about submitting an article through the [author guidelines](#).

## COVID-19 and Cloud Technologies: All-Cloud IT Operating Model

## for Pandemic Management

Dr. Petar Radanliev and Professor Dave De Roure, *Department of Engineering Sciences, University of Oxford, England, UK*

In this article, we analyze the value and potential of cloud technologies in pandemic management, with a specific focus on COVID-19. COVID-19 has exposed significant weaknesses in healthcare systems across the globe. The systems in some of the most technologically advanced nations (e.g. Singapore, Taiwan, South Korea) have adapted much faster, with significantly lower death rates. To investigate how healthcare systems globally can advance to similar levels, we discuss the influence of technology on the adaptation of all-cloud operating models in digital healthcare. Our focus on cloud technologies in healthcare is based on the fact that traditional IT operating models are slowly becoming obsolete in the new digital age.

[Read More](#)

## Envisioning Information Delivery for the Future

Dr. Frank Groom, *Ball State University, Muncie, Indiana*

As various forms of journalism are being changed by new technologies and communication platforms, investors such as Gannett have stepped in to utilize current technologies in order to centralize content, shrink costs to a minimum, and where possible, stream content delivery over the Internet.

It may be too late to fix the major components of local, regional, national, and global information delivery as they have been fragmented to a point of no return. However, it is time to start a new process - envisioning and then implementing information delivery for the future. As an added benefit, this may enhance entertainment delivery methods, which coincides with news delivery.

[Read More](#)

---

## Current Activities in our Technical Communities



The [IEEE Healthcare: Blockchain & AI Virtual Event Series](#) is leveraging the new digital world that the COVID-19 pandemic has necessitated to discuss Blockchain & AI

enabled solutions and their impact on healthcare. This series aims to deliver actionable discussions from all aspects of the healthcare industry. Virtual Sessions are held monthly on the first Wednesday. [Learn more and register](#) for the next meeting, AI Ethics for Healthcare, on 3 February.

[Visit Web Portal](#)



IEEE Brain announces publication of Version 2 of *Future Neural Therapeutics*, a technology roadmap white paper that identifies key challenges and advances required to successfully develop next generation closed-loop neurotechnologies. Continued input from neuroscientists, engineers, neuroethicists, and clinicians is requested to ensure that all stakeholders have a voice in articulating the technology development process. Access the white paper and submit your feedback at the IEEE Brain portal.

[Visit Web Portal](#)



The *IEEE Transactions on Cloud Computing* is a scholarly journal dedicated to the multidisciplinary field of cloud computing. It publishes peer-reviewed articles that present innovative research ideas and application results of cloud computing, focusing on key technical issues related to theory, algorithms, systems, applications, and performance.

[Visit Web Portal](#)



*IEEE Security & Privacy Magazine* aims to provide a unique combination of research articles, case studies, tutorials, and regular departments covering diverse aspects of security and dependability of computer-based systems, including legal and ethical issues, privacy concerns, tools to help secure information, methods for development and

assessment of trustworthy systems, analysis of vulnerabilities and attacks, trends and new developments, security issues in wireless networks, design and test strategies for secure and survivable systems, and cryptology, and other topics of interest to a general, technically oriented readership.

[Visit Web Portal](#)



Learn more about the technologies Digital Reality encompasses in [Exploring IEEE's Digital Reality Technologies to Accelerate Business Growth](#). In this webinar, Nicholas Napp, the project lead for IEEE's Digital Reality Exchange project, dives into the challenges presented by digital reality projects. Discover how IEEE's Digital Reality Exchange can help overcome challenges and be instrumental in driving digital transformation within the enterprise. In addition, [register now](#) for the February webinar in which Dr. Roberto Saracco, the initiative co-chair, will discuss digital transformation challenges, implementation, and impact during COVID-19.

[Visit Web Portal](#)



Future Networks has partnered with IEEE Vehicular Technology Society for their latest magazine issue to discuss "[Laying the Milestones for 6G Networks](#)." The latest podcast has been released with David Witkowski (Oku Solutions), William F. Hammett, and Rajat Mathur (Hammett & Edison) discussing the fourth part of "[The 5G Deployment Challenge: A Panel Discussion on the Health and Safety Concerns about 5G](#)." The featured video includes Chih-Lin I (China Mobile) from her 5G World Forum keynote address on "[The Next Phase of 5G: Progress, Challenges, and Opportunities](#)."

[Visit Web Portal](#)



The IEEE World Forum on the Internet of Things 2021 ([WF-IoT 2021](#)) seeks submissions and proposals for original technical papers that address the Internet of Things (IoT), its theoretical and technological building blocks, the applications that drive the growth and evolution of IoT, operational considerations, experimentation, experiences from deployments, and the impacts of IoT on consumers, the public sector, and industrial verticals. In addition, the World Forum is also seeking proposals for: Special Sessions, Workshops, and Industry Panels aimed at research topics important to industrial IoT issues.

[Visit Web Portal](#)



The Life Sciences Technical Community (LSTC) is pursuing activities in two unique areas of interest: Life Sciences for Extreme Environments; and Veterinary Medicine Engineering. Special sessions for both of these areas were held at the [42nd Annual Engineering in Medicine and Biology Conference \(EMBC\) 2020](#) and were in the Top 5% of both abstract reviews and content views during the virtually held meeting. Veterinary Medicine Engineering is going to explore technology used in Zoos and Aquariums for animal and marine life welfare. Extreme Environments considers the role of life sciences in areas such as Space Exploration, Underwater habitation, High altitude living, and situations such as fire rescues.

[Visit Web Portal](#)



The [IEEE Quantum Podcast Series](#) interviews top subject matter experts in the emerging field of quantum computing, covering topics from quantum engineering to benchmarking, standardization, industry trends, and more. In the [latest episode](#), Dr. Anne Matsuura, Director of Quantum Applications and Architecture at Intel Labs, discusses Intel's focus on drawing from a workload-driven hardware/software code design approach, including the

software side of the house of defining and designing the full compute stack.

[Visit Web Portal](#)



As of 1 January 2021, the IEEE Rebooting Computing Initiative has graduated from Future Directions and transitioned to a task force within IEEE Computer Society. The Task Force on Rebooting Computing (TFRC) comprises four main components: conferences, competitions, community, and roadmaps. TFRC continues to explore novel approaches to future computing and is supported by a wide range of IEEE Societies and Councils. For further information, learn more at the [IEEE Rebooting Computing portal](#).

[Visit Web Portal](#)



The IEEE International Smart Cities Conference 2020 was the 6th edition of a high-level technical conference, with worldwide recognized specialists that shared their findings about the latest trends, technologies and solutions for Smart Cities. The theme of the conference was aligned to the current worldwide challenge that the world is facing with the pandemic of COVID-19, and some interesting discussions arose during the 4 days of the event. This edition was virtual for safety reasons, and over 300 participants from multiple countries attended the event. For the first time, the recordings of the event are available at the [IEEE Smart Cities Resource Center](#).

[Visit Web Portal](#)



IEEE Smart Grid hosts a series of webinars on varying aspects of global grid modernization. [Visit the Live Webinar Events](#) page on the IEEE Smart Grid web portal to see the

latest offerings, or [browse the Past Webinars page](#) to access previously recorded webinars on demand.

[Visit Web Portal](#)



IEEE SDN now offers a collection of online courses in the field of Software Defined Networking, Network Function Virtualization, and related technologies. Learn from industry experts about topics that include the fundamentals of SDN and NFV, security and management challenges, the latest SDN open source platforms, and more. Participants also have the opportunity to earn Continuing Education Units (CEUs) and Professional Development Hours (PDHs) with each course. [Access the courses.](#)

[Visit Web Portal](#)



The IEEE Sustainable ICT Initiative's mission is to build a holistic approach to sustainability through ICT by incorporating green metrics through IEEE technical domains and seeks to foster the incorporation of green metrics and standards in design concepts for various technical domains. The initiative brings together expertise from different fields, in conferences and publications, with a view to foster holistic design and standardization approaches. Please [join the IEEE Sustainable ICT Technical Community](#) to help drive this very important topic.

[Visit Web Portal](#)



IEEE Transportation Electrification Community December 2020 Newsletter is now available. This issue features the following: Message from the Publications Committee Chair Jason Lai, Letter from Co-Editor-in-Chiefs JinWoo Ahn and Sheldon Williamson, Update from International Conference on Power Electronics and Systems Applications (PESA)



2020, Interesting Challenges of Designing Driver Assist Systems, and Electrical Power Transportation for Hybridization Systems In Aeronautical Domain. [View the articles](#) at the IEEE TEC portal.

[Visit Web Portal](#)

---

## IEEE Future Directions Events

- [2021 IEEE International Forum on Smart Grids for Smart Cities \(SG4SC\)](#)  
17-23 March 2021, Online
- [2021 IEEE International Conference on Intelligent Reality \(ICIR\)](#)  
12-14 May 2021, Online
- [2021 IEEE 7th World Forum on Internet of Things \(WF-IoT\)](#)  
20-24 June 2021, New Orleans, Louisiana, USA
- [2021 IEEE 7th International Conference on Network Softwarization \(NetSoft\)](#)  
28 June - 2 July 2021, Tokyo, Japan

---

### Subscribe to this Newsletter

Subscribers of an IEEE Future Directions initiative technical community receive this newsletter automatically. If you did not receive a copy of this newsletter directly, or you would like to learn more about a particular initiative, you can subscribe by [joining an initiative](#).

### View the Newsletter Archive

If you would like to read any of our past issues, you can [find them here](#).

### Contribute Content

If you would like to submit items to be considered for inclusion in this newsletter, please send an email to [ieeefd-digital@ieee.org](mailto:ieeefd-digital@ieee.org).



© 2021 IEEE— All rights reserved.

[Unsubscribe](#) | [Privacy Policy](#) | [Contact](#)