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IEEE Brain joins the BRAIN (Brain Research through Advancing Innovative Neurotechnologies) Initiative Alliance

The IEEE Brain Initiative is excited to announce a new partnership with the [BRAIN \(Brain Research through Advancing Innovative Neurotechnologies\) Initiative Alliance](#). Striving to reach similar goals, the aim of the partnership between the two organizations is to gather the best scientists and engineers across industry, academia, and government to accelerate neuroscience research through the development and application of innovative technologies to transform our understanding of the brain to treat diseases and improve lives. IEEE Brain Co-chair Jacob Robinson, PhD, says, "The partnership between the BRAIN Initiative Alliance and IEEE Brain will help ensure closer collaborations between representatives from various communities, including neuroscience, medicine, and engineering, in developing standards and guidelines for new neurotechnology." The value of the partnership is described in the [press release](#) issued by the BRAIN Initiative.

Learn more about IEEE Brain on their [web portal](#), which includes upcoming events including hackathons and competitions, educational offerings, podcasts and Q&As from leading neurotechnology experts, and news about advances in neurotechnology around the world.

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 currently seeking submissions of original content for 2019, 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. Learn more about submitting an article through the [author guidelines](#).

Fake News Remastered: The Impact of Technology

By Renato Opice Blum and Camila Rioja

Fake news is the buzzword of the moment. Specifically, in Brazil, the theme was one of the

most relevant topics in the elections held this past October. With flashy titles and loaded with content aimed at triggering emotions, fake news are powerful weapons in today's digital reality. Brazil has more than one functioning smartphone per inhabitant (approximately 220 million currently and counting), as estimated by a study conducted by a prestigious Brazilian university early 2018. Worldwide, a projection made by the Statista portal shows that smartphone users will reach over 2.87 billion by 2020. Thus, is somewhat intuitive how fast fake news can spread through social media and/or communication apps such as WhatsApp and Telegram. [Read more.](#)

Current State of API Security and Machine Learning

By Fatima Hussain, Brett Noye, and Salah Sharieh, Royal Bank of Canada, Toronto

The adaptation of application program interface (API)s in every enterprise is the emerging business trend, and at the same time it diversifies the threat domain for businesses. APIs are becoming the new and most important infrastructure layer on the Internet and are the most vulnerable point of attacks in modern systems. Each API adds new dimensions to security threats and attack vectors to corporate data and applications, therefore critically forfeiting the business systems. Traditional security features for APIs protection are provided through API gateways, and it had been nothing more than API keys and username/password combinations (HTTP authentication). On the other hand, intruders and hackers are getting smarter. Combining the proliferation of social engineering platforms with recent technological advancements, the ability to gain access to confidential data has become both easier and common. APIs funnel data among applications, a multitude of various API users, and cloud infrastructure, therefore sensitive / confidential information might get exposed to unauthorized users, if API security is not carefully crafted. Using a holistic approach to securing APIs not only addresses the vulnerability issues, but offers protection for all of the infrastructure, networks and information. [Read more.](#)

Information Assurance and Security Issues in Telemedicine - Future Directions

By Ankur Chattopadhyay and Robert Ruska Jr., University of Wisconsin, Green Bay

One of the challenges in healthcare is to provide equitable access to services, given that the provider and the patient are traditionally expected to be physically present in the same place. Technological advancements have been made to overcome obstacles to equitable healthcare services, and enable convenient access to quality healthcare for consumers throughout the world. The field of digital healthcare, which is known as telemedicine, is rapidly making its way globally across the healthcare services domain. It allows the transfer of images and video through telecommunication technology, giving physicians the ability to evaluate, diagnose, and in certain cases, treat patients remotely. Patients can visit providers over live video without travelling for immediate care and for follow up treatment. Not only does it give patients the ability to schedule appointments with local physicians via live video communication without having to leave home, but it also allows them to consult with distant healthcare professionals and avail their services remotely. [Read more.](#)

Current Activities in our Technical Communities

IEEE DataPort™ is now available for use! Go to ieee-dataport.org to be connected to this valuable one-stop shop data repository which serves the growing Big Data technical community. Contact [Melissa Handa](#)



(melissa.handa@ieee.org) for a coupon code to become a subscriber free of charge.

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The top five most popular articles of IEEE Blockchain Technical Briefs from last year have been collected in a special edition entitled, [Best of IEEE Blockchain Technical Briefs 2018](#). If you haven't had a chance to read through our past issues, this special edition is a great place to start. If you are working in the blockchain space, we are always looking for new contributors. See our [editorial guidelines](#) for more information.

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IEEE Brain launched its Webinar Series in April 2019. The objective of the IEEE Brain Webinar Series is to be the first point of learning for engineering and technology advancements that improve our understanding of the brain, to treat diseases and to improve the human condition. The first 2 webinars are now [available on-demand](#).

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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.

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[IEEE Security & Privacy magazine](#) provides articles with both a practical and research bent by the top thinkers in the field along with case studies, tutorials, columns, and in-depth interviews and podcasts for the information security industry.

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Join the Digital Reality Initiative at these upcoming events: Attend a special panel session "[Impacts & Trends of AR/VR/MR/ML/AI on Industry](#)," and visit the [IEEE Future Directions exhibit booth](#) at AWE USA 29-30 May in Santa Clara, CA. Attend the plenary panel, "Convergence and Transformation of Data Digitally via AI, ML, Autonomous Systems," at [IEEE COMPSAC 2019](#), 15-19 July in Milwaukee, WI.

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The Future Networks Initiative is looking for volunteers to contribute to the *IEEE International Network Generations Roadmap (INGR)* whose objective is to guide and focus the industry and standards ecosystems to successfully evolve network generations (5G and beyond) from current to future state, including identifying trends, future needs, challenges and gaps, and possible solutions and innovations from both business and technology perspectives. There are a variety of working groups that are looking for participants, such as Edge Automation Platform, Optics, Millimeter Wave, Satellite, and others. Learn more and consider volunteering by contacting a [Working Group Team](#). In addition, an Industry Advisory Board meets regularly to ensure that industry needs, challenges, and expectations are addressed. Email 5Groadmapinfo@ieee.org if you are interested in participating on the INGR Industry Advisory Board.

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The *IEEE Internet of Things Magazine (IoTM)* publishes high-quality articles on IoT technology and end-to-end IoT solutions. IoTM articles are written by and for practitioners and researchers interested in practice and applications and selected to represent the depth and breadth of the state of the art. The technical focus of IoTM is the multi-disciplinary, systems nature of IoT solutions. IoTM is a forum for practitioners to share experiences, develop best practices, and establish guiding principles for technical, operational and business success.

Download a free copy today! We hope you enjoy reading the magazine and welcome you to submit an article too. [View more information and download your copy.](#)

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Veterinarians face different challenges daily from examining and monitoring species with different physiologies, to



anesthetizing exotic animals with various physioanatomic peculiarities, to identifying and predicting illness in a broad spectrum. Veterinary Medicine Engineering relates to IEEE Life Sciences in several areas from medical devices, biosensor technologies, signal and image processing to big data and virtual reality. Veterinary Medicine Engineering is a new research stream inside Life Science that aims to improve therapeutics, animal care, and animal research developing new devices, algorithms, processes, and systems that advance veterinary medicine. The development of veterinary technology will provide more accurate techniques for the therapeutic practice following ethical guidelines and improving research outcomes when utilizing animals.

The IEEE LSTC Fall 2019 1-day Workshop on Mobile Health will take place in Washington, DC, in October 2019 and will convene experts in mobile health from industry, academia and governments.

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IEEE Future Directions has launched a new initiative, IEEE Quantum, that will serve as IEEE's leading community for all projects and activities on quantum technologies. Access the newly launched IEEE Quantum web portal for the latest news, articles, upcoming events, videos and more on the fields of quantum computing and information processing.

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The [2019 IEEE International Conference on Rebooting Computing \(ICRC\)](#) will be held 6-8 November 2019 in San Mateo, California, USA as part of [IEEE Rebooting Computing Week 2019](#). Join us for another exciting week of events and hear leading experts discuss the next era of computing.

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View the latest IEEE Smart Cities webinar called "The Important Player for Smart Cities: Mobility and Its Systems". Visit the IEEE Smart Cities portal for access to all webinars.

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There are 4 new IEEE Smart Grid learning modules on



IEEE *Xplore* by John McDonald, Smart Grid Business Development Leader for GE Power's Grid Solutions business. [Access the learning modules.](#)

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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.](#)

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The [2019 IEEE Sustainability through Information, Communication and Technology Summit \(StICT\)](#), in its second edition, will be held on 18-19 June 2019 at the ETS campus in Montréal. Under the theme of "ICT - A Key Driver for Sustainability," the Summit promotes a holistic approach on prospects for technologies, standards, and policies for ICT-enabled sustainable development that also takes into consideration the sustainability of ICT resources. Join us!

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Visit our portal to read the latest [IEEE Talks Transportation Electrification](#) which discusses the collaborative efforts between IEEE and the American Institute of Aeronautics and Astronautics (AIAA) that explore likely scenarios or electrified aviation propulsion architectures.

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IEEE Future Directions Events

[Impacts & Trends of AR, VR, MR, ML, AI on Industry](#), held at 2019 Augmented World Expo (AWE) USA, 30 May 2019, Santa Clara, California, USA

[2019 IEEE Low-Power Image Recognition Challenge \(LPIRC\)](#), held at 2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 17 June 2019, Long Beach, CA, USA

[2019 IEEE Sustainability through ICT Summit \(StICT\)](#), 18-19 June 2019, Montréal, Quebec, Canada

[2019 IEEE Transportation Electrification Conference and Expo \(ITEC\)](#), 19-21 June 2019, Novi, MI, USA

[2019 IEEE Conference on Network Softwarization \(NetSoft\)](#), 24-28 June 2019, Paris, France
[Convergence and Transformation of Data Digitally via AI, ML, Autonomous Systems](#), held at
2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC), 18
July 2019, Milwaukee, Wisconsin, USA

[AIAA/IEEE Electric Aircraft Technologies Symposium \(EATS\)](#), 22-24 August 2019, Indianapolis, IN, USA

[2019 IEEE Secure Development \(SecDev\)](#), 25-27 September, 2019, McLean, VA, USA

[2019 IEEE 5G World Forum \(5GWF'19\)](#), 30 September - 2 October 2019, Dresden, Germany

[2019 IEEE International Smart Cities Conference \(ISC2\)](#), 14-17 October 2019, Casablanca, Morocco

[2019 IEEE Rebooting Computing Week](#), 4-8 November 2019, San Mateo, CA, USA

[Workshop on Blockchain in Telecommunications: Emerging Technologies for the Next Decade and Beyond](#) at [IEEE Globecom](#), 9-13 December 2019, Waikoloa, Hawaii, USA

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



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