IEEE Information Theory Society Newsletter

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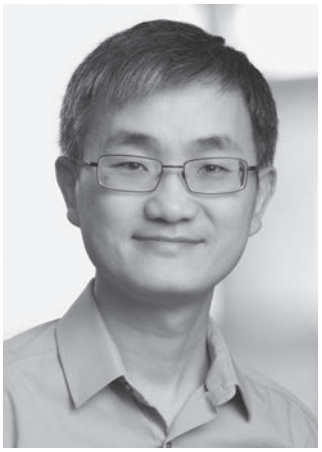
President's Column

Wei Yu



As weather turns warmer and days get longer in the Northern Hemisphere, I start to dream about going to ISIT. Alas, physical traveling is not to happen this year. By the time this column appears in print, ISIT Melbourne is probably about to begin, or may already be underway—in an online virtual format. But the physical world is likely still a grim place. While parts of the globe may already be on their way to reopening thanks to the vaccination effort, the coronavirus is still raging in many other parts of the world. If anything, the pandemic has only exacerbated the divide across the national boundaries and the inequity between the haves and have-nots.

The Information Theory Society is an international community brought together by our shared intellectual connection to the field started by Claude E. Shannon. In terms of geographic diversity, 41% of our society members are from U.S. and Canada, 30% from Asia Pacific, 26% from Europe, Middle East, and Africa, and 3% are from Latin America. The ISIT is meant to be a singular opportunity for all of us to come together every year -- to share our latest discoveries and to celebrate the successes and achievements of our field.

But even pre-pandemic, attending ISIT had already become an expensive proposition. Post-pandemic, it is not very clear what roles online content will play in future ISITs. Toward this end, the society's conference committee, under the astute leadership of P. Vijay Kumar, has sent out a short survey on the future format of ISIT. The survey is available at https://www.surveymonkey.com/r/RHSZ29L. Please fill one in, if you have not already. It will help the planning of future ISITs a great deal.

Organizing an ISIT is a huge multi-year volunteering commitment which will only become more challenging as we contemplate how to mount conferences in hybrid format in a post-pandemic world. Conferences serve not only as a place to exchange ideas, but also to network and to build professional relations. To this end, face-to-face connections cannot yet be replaced by virtual presence. It is our next generation of students, post-doctoral fellows, and early-career faculty members who will benefit the most from these in-person interactions. I still remember extremely well, the excitement and my own nervousness before my very first talk at ISIT in Sorrento, Italy, when I was a beginning graduate student, and the life-long connections I made at that ISIT. Each subsequent ISITs that I attended had always brought fresh ideas and new motivations to my own research. How can we re-create such an experience in a virtual world? The conference committee will love to hear from you.

One of the unique features of our society is the Schools of Information Theory. After the hiatus of the last summer, the European School was held in Stuttgart, Germany in November last year. The North American School will take place in Vancouver, Canada in June, the Indian School at Indian Institute of Technology Kanpur at the end of June, and the East Asian School in Korea in August. All of these schools are virtual this year (all with very low registration fees), so the time zone differences are really the only barrier for attending the tutorials and participating in the poster sessions at these schools. Please go online and check out these schools!

Our society also now has a brand new online presence. The aptly named "FITS – Future of Information Theory Society" committee, led by Brian Kurkoski and Matthieu Bloch, has been hard at work to revamp the web infrastructure for our society in order to support a new video section, as well as dedicated sites for our journal, magazine, schools, and in the future, workshops and conferences. With the highly anticipated inauguration of the society's new *BITS: The Information Theory Magazine*, this very newsletter will also transform itself next year to a dedicated section in our online website.

(continued on page 3)

From the Editor

Changho Suh

I trust everyone is doing as well as possible in these troubled times. This is the June issue of our society newsletter. We start with the president's column sharing a couple of thoughts and ideas on the future of ISIT in the pandemic era. We continue with congratulating Meir Feder for winning an Academy Award that anyone in our society may have never imagined receiving. The award was presented by Hollywood's Academy of Motion Picture Arts and Sciences. We also congratulate the members of our society that have recently been named Padovani Lecturer (Muriel Médard), Goldsmith Lecturer (Yuejie Chi), and Distinguished Lecturers (Lara Dolecek & Ning Cair). Next, Brian Kurkoski, ITSoc Online Committee Chair, updates us on numerous features newly added into our society website. We also have the minutes from the Board of Governors meeting that was held virtually this past March.

As a reminder, announcements, news, and events intended for both the printed newsletter and the website, such as award announcements, calls for nominations, and upcoming conferences, can be submitted at the IT Society website http://www.itsoc.org. Articles and columns can be e-mailed to me at chsuh@kaist.ac.kr with a subject line that includes the phrase "IT newsletter."

The next few deadlines are:

July 31, 2021 for the issue of September 2021.

October 31, 2021 for the issue of December 2021.

January 31, 2021 for the issue of March 2022.

Please submit plain text, LaTeX, or Word source files; do not worry about fonts or layout as this will be taken care of by IEEE layout specialists. Electronic photos and graphics should be in high resolution and sent as separate files.

Changho Suh

IEEE Information Theory Society Newsletter

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Table of Contents

Awards: ITSoc Life Fellow Meir Feder Receives Academy Award

Frank Kschischang

On February 13, 2021, Hollywood's Academy of Motion Picture Arts and Sciences presented Meir Feder, Zvi Reznic, Guy Dorman and Ron Yogev, of the Israeli company Amimon, with an academy award "for the development of the Amimon wireless chipset, which enables untethered, high-quality on-set, encrypted digital video monitoring with sub-frame latency."

From left to right: Guy Dorman, Zvi Reznic, Meir Feder, Ron Yogev

Amimon, co-founded by Meir Feder, his former student Zvi Reznic, and Noam Geri in 2004, later acquired by The Vitec Group in 2018, is a developer of wireless chipsets enabling low delay wireless delivery of high-definition and ultra-high definition video. Amimon's original concept, aimed at the consumer market, was to develop a wireless replacement for the HDMI cable between a video source and a video display. Amimon eventually pivoted towards high-end applications in endoscopy, film and television production, unmanned aerial vehicles, and remote machinery. In the motion picture industry, Amimon's technology allows for the transmission of high quality video from a large number of cameras to monitors on the set. This allows the film's crew to adjust all shooting angles simultaneously in real time, creating a system that enables virtually unrestricted camera motion, thereby expanding creative freedom during filming.

The key technical innovation of Amimon's technology is a joint source and channel coding technique adapted for video transmission over MIMO-OFDM wireless channels. The system uses per-video-frame transform coding, mapping transform coefficients directly to transmitted constellation points, according to an unequal error protection strategy. Important transform coefficients such as the most significant bits of the low-frequency transform coefficients, are transmitted with a robust low-order modulation format that achieves a low probability of error, while refinements to this coarse information (for example, the quantization error in the low-frequency transform coefficients and the high-frequency transform coefficients) are transmitted using higher order modulation or in analog form. This results in a "universal" combined analog/digital transmission system where the quality of the delivered video varies smoothly with the signal to noise ratio of the wireless channel, allowing the receiver to adapt to channel conditions without the need for a feedback channel. Together with instantaneous video processing, the scheme works with virtually no delay. The technology includes many further innovations, including an "analog scrambler" to improve the peak-to-average ratio of the transmitted signal.

Likely the first large scale commercial implementation of joint source channel coding, Amimon's 2nd generation solution transmits full-HD (1920 × 1080p) video at 60 frames per second over a bandwidth of 20MHz or 40MHz, and their third generation solution supports 4K (3840 × 2160p) video. The currently developed 4th generation will use higher bandwidth and larger MIMO to support up to 8K (7680 × 4320p) video.

Upon receiving the academy award, Prof. Feder stated: "For me and the great team who took part in developing the technology, this is an enormous achievement and I feel very proud for changing the movie industry." Congratulations Meir, your accomplishment has made the entire IEEE Information Theory Society feel proud!

President's Column *(continued from page 1)*

I cannot wait for all these exciting new developments that are coming to our society, as we pivot to a stronger virtual presence and further strengthen ourselves as an international community. Wish all of you a great summer (or winter if you are in Southern Hemisphere). I look forward to seeing many of you at the virtual ISIT, Melbourne!

Congratulations to the 2021 Lecturers

Christina Fragouli

Padovani Lecturer: Muriel Médard

The IEEE Information Theory Society (ITSoc) is pleased to announce that Professor Muriel Médard of MIT is named the 2021 Padovani Lecturer. The Padovani Lecturer Program was established with a generous gift by Dr. Roberto Padovani in 2009. The award provides for an outstanding member of the information theory community to deliver a lecture at one of the ITSoc's Schools of Information Theory, for the benefit of students and postdoctoral researchers.

Message from Muriel: I think we are at point where our community, because of its versatility and multi-faceted applications, is at the threshold of making yet again great contributions. For this, I believe we need to be open minded , intellectually curious and embrace not only new applications but also new techniques, including mathematical ones that may have been unfamiliar to us.

Muriel Médard is the Cecil H. and Ida Green Professor in the Electrical Engineering and Computer Science (EECS) Department at MIT, where she leads the Network Coding and Reliable Communications Group in the Research Laboratory for Electronics at MIT.

She obtained three Bachelors degrees (EECS 1989, Mathematics 1989 and Humanities 1991), as well as her M.S. (1991) and Sc.D (1995), all from MIT. She is a Member of the US National Academy of Engineering (elected 2020), a Fellow of the US National Academy of Inventors (elected 2018), and a Fellow of the Institute of Electrical and Electronics Engineers (elected 2008). Muriel was elected president of the IEEE Information Theory Society in 2012, and served on its board of governors for eleven years. She holds an Honorary Doctorate from the Technical University of Munich (2020).

She has served as technical program committee co-chair of ISIT (twice), CoNext, WiOpt, WCNC and of many workshops. She has chaired the IEEE Medals committee, and served as member and chair of many committees, including as inaugural chair of the Millie Dresselhaus Medal. She was Editor-in-Chief of the IEEE Journal on Selected Areas in Communications and has served as editor or guest editor of many IEEE publications, including the IEEE Transactions on Information Theory, the IEEE Journal of Lightwave Technology, and the IEEE Transactions on Information Forensics and Security. She was a member of the inaugural steering committees for the IEEE Transactions on Network Science and for the IEEE Journal on Selected Areas in Information Theory.

Muriel received the inaugural 2013 MIT EECS Graduate Student Association Mentor Award, voted by the students. She set up the Women in the Information Theory Society (WithITS) and Information Theory Society Mentoring Program, for which she was recognized with the 2017 Aaron Wyner Distinguished Service Award. She served as undergraduate Faculty in Residence for seven years in two MIT dormitories (2002–2007). She was elected by the faculty and served as member and later chair of the MIT Faculty Committee on Student Life and as inaugural chair of the MIT Faculty Committee on Campus Planning. She was chair of the Institute Committee on Student Life. She was recognized as a Siemens Outstanding Mentor (2004) for her work with High School students. She serves on the Board of Trustees since 2015 of the International School of Boston, for which she is treasurer.

She has over fifty US and international patents awarded, the vast majority of which have been licensed or acquired. For technology transfer, she has co-founded three companies, CodeOn, for which she consults, Chocolate Cloud, on whose board she serves, and Steinwurf, for which she is Chief Scientist. Muriel has supervised over 40 master students, over 20 doctoral students and over 25 postdoctoral fellows.

She was co-winner of the MIT 2004 Harold E. Egerton Faculty Achievement Award and was named a Gilbreth Lecturer by the US National Academy of Engineering in 2007. She received the 2017 IEEE Communications Society Edwin Howard Armstrong Achievement Award and the 2016 IEEE Vehicular Technology James Evans Avant Garde Award. She received the 2019 Best Paper award for IEEE Transactions on Network Science and Engineering, the 2018 ACM SIGCOMM Test of Time Paper Award, the 2009 IEEE Communication Society and Information Theory Society Joint Paper Award, the 2009 William R. Bennett Prize in the Field of Communications Networking, the 2002 IEEE Leon K. Kirchmayer Prize Paper Award, as well as eight conference paper awards. Most of her prize papers are co-authored with students from her group.

Muriel has made numerous and profound contributions to the theory and practice of network coding, optical networks and wireless communications. More recently, she is interested in designing decoders using GRAND (Guessing Additive Noise Decoding), that are universal and use any knowledge about noise statistics to their advantage, in bringing network coding into network protocols and using them to build new security tools, particularly for post-quantum crypto. Professor Médard will give her lecture at the India Information Theory School in June 28–July 1st that will be offered online.

Goldsmith Lecturer: Yuejie Chi

The IEEE Information Theory Society (ITSoc) is pleased to announce that Professor Chi has been named the 2021 Goldsmith Lecturer. The ITSoc recently endowed the Goldsmith Lecturer Program with a generous gift by Dr. Andrea Goldsmith. The award provides travel support for an outstanding early-career woman researcher to deliver a lecture at one of the ITSoc's Schools of Information Theory, held for the benefit of students and postdoctoral researchers. By highlighting technical achievements of early career women, the ITSoc Goldsmith Lecturer Program helps the award recipients build their professional career and recognition. The Lectureship contributes to the public visibility of the

researcher and helps increase the diversity of IEEE ITSoc and IEEE as a whole, as women are an under-represented group in both. The award recipient will also serve as a role model and inspiration to diverse students attending the Information Theory Schools.

Message from Yuejie Chi: I feel very honored to be named as the 2021 Goldsmith Lecturer, and look forward to connecting with peer researchers and students through my lecture at the upcoming 2021 IEEE East Asian School of Information Theory.

Yuejie Chi is an Associate Professor in the department of Electrical and Computer Engineering and a faculty affiliate with the Machine Learning department and CyLab at Carnegie Mellon University, where she held the Robert E. Doherty Early Career Development Professorship from 2018 to 2020. Among others, Dr. Chi is a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE), and the inaugural IEEE Signal Processing Society Early Career Technical Achievement Award for contributions to high-dimensional structured signal processing. Her research interests lie in the theoretical and algorithmic foundations of data science, signal processing, machine learning and inverse problems, using a mixture of tools from high-dimensional statistics, information theory, optimization theory and harmonic analysis. Most recently, she is interested in designing preconditioned first-order methods to accelerate nonconvex statistical estimation, and understanding the computational and statistical efficiencies of reinforcement learning. Professor Chi will deliver her lecture at the inaugural IEEE East Asian School of Information Theory held August 3–6 2021 that will be offered online.

The IEEE Information Theory Society gratefully acknowledges the financial support from the following corporate sponsors to the Goldsmith Lecturer Program: Gold Sponsors Huawei, Intel, Nokia, Qualcomm; Silver Sponsors Assia, Interdigital; and Bronze Sponsors Google, Keysight, Microsoft, Texas Instruments.

Distinguished Lecturers: Lara Dolecek & Ning Cai

The IEEE Information Theory Society (ITSoc) is pleased to announce that Professor Lara Dolecek of the University of California at Los Angeles and Professor Ning Cai of the ShanghaiTech University have been named ITSoc Distinguished Lecturers for 2021–22. The IEEE Information Theory Society established the Distinguished Lecturers Program to promote interest in information theory by supporting its local chapters to invite prominent information theory researchers to give lectures at their events.

Message from Lara Dolecek: I am honored to be selected a 2021–22 Distinguished Lecturer of the IEEE Information Theory Society. I look forward to the opportunity to present my work and to have fruitful discussions with colleagues around the world.

Lara Dolecek is a Full Professor with the Electrical and Computer Engineering Department and Mathematics Department (courtesy) at the University of California, Los Angeles (UCLA). She holds a B.S. (with honors), M.S. and Ph.D. degrees in Electrical Engineering and Computer Sciences, as well as an M.A. degree in Statistics, all from the University of California, Berkeley. She received the 2007 David J. Sakrison Memorial Prize for the most outstanding doctoral research in the Department of Electrical Engineering and Computer Sciences at UC Berkeley. Prior to joining UCLA, she was a postdoctoral researcher with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. She received IBM Faculty Award (2014), Northrop Grumman Excellence in Teaching Award (2013), Intel Early Career Faculty Award (2013), University of California Faculty Development Award (2013), Okawa Research Grant (2013), NSF CAREER Award (2012), and Hellman Fellowship Award (2011). With her research group and collaborators, she received numerous best paper awards. Her research interests span coding and information theory, graphical models, statistical methods, and algorithms, with applications to emerging systems for data storage and computing, and, most recently, including blockchain systems and quantum information systems. She currently serves as an Associate Editor for IEEE Transactions on Information Theory and as the Secretary of the IEEE Information Theory Society. Prof. Dolecek has served as a consultant for a number of companies specializing in data communications and storage.

Message from Ning Cai: Hello, my friends and colleagues. I was very glad for being named as a Distinguished Lecturer of the IEEE Information Theory Society. It is to me a great honor. I would like to share my happiness with you and say thanks to all of you, especially to the nominators, Prof. Stark C. Draper and Prof. Wei Yu.

Recalling my academic career during the decades, I received a lot of friendship, helps, cooperation, and encourage from you. I would like to take the chance and say many thanks to all of you for your all kindness. Hope you get more achievement in your academic careers and enjoy your lives and works in our community.

Ning Cai (M'08-SM'09-F'15) received the B.S. degree in mathematics from the Normal College of Beijing, Beijing, China in 1982, the M.S. degree in mathematics from Academia Sinica, Beijing, China, in 1984, and the Dr. degree in mathematics from the University of Bielefeld, Bielefeld, Germany, in 1988.

During 1984–1986, he was with the Institute of Systems Sciences, Academia Sinica, Beijing, China. From 1989 to 1998, he was a Wiss. Mitarbeiter in the Department of Mathematics, the University of Bielefeld, Germany, and from 1998 to 1999, he was with the School of Computing, the National University of Singapore, Singapore. From 2000 to 2001, he was with the Department of Information Engineering, the Chinese University of Hong Kong. From 2002 to 2004, he was with the Department of Mathematics, the University of Bielefeld, Germany. In 2005, he visited Department of Information Engineering, the Chinese University of Hong Kong. From 2006 to March 2016, he was a distinguished professor of the State Key Lab of Integrated Services Networks (ISN), Xidian University, China. Since April

2016, he has been a distinguished professor of the School of Information Science and Technology, ShanghaiTech University, Shanghai, China.

Dr. Cai is a recipient of the 2005 IEEE Information Theory Society Paper Award for the paper "Linear network coding," and a recipient of 2016 IEEE Eric E. Sumner Award "For pioneering contributions to the field of network coding," both with S.-Y. R. Li and R. W. Yeung. His joint paper "R, Ahlswede, N. Cai, S.-Y. R. Li and R. W. Yeung, Network information flow" received the 2018 ACM SIGMOBILE Test-of-Time Paper Award. He was named as a Distinguished Lecturer of the IEEE Information Theory Society in 2021–2022. He is an IEEE Fellow.

He has served on the committees of a number of information theory symposiums and workshops. Currently, his research interests include network coding, classical information theory and quantum information theory.

Board of Governors: The IT Society Has a New Website

Brian Kurkoski

We are pleased to announce that the IEEE Information Theory Society has a new website at itsoc.org. Our website is the core of the Society's online presence, and this upgrade adds numerous new features, to benefit the members, as well as to reach beyond our community. Major features of the new site include a video section, membership login with IEEE single sign-on, member profiles, news and events, mailing list integration, and sites for JSAIT and Schools of Information Theory.

The new video section features collections of videos on information theory. Video is becoming an increasingly important means for disseminating technical knowledge, and the new site hosts videos such as ISIT plenary sessions, tutorials from Schools of Information Theory and the "Art of the Problem" videos supported by the Society. We look forward to expanding the video offerings — particularly by adding educationally-oriented videos and technical presentations. Suggestions for video contributions are welcomed.

Members can now log in with their IEEE single sign-on (SSO) credentials, the same email address and password you use to access ieee.org. You can set up a profile page, which includes your biography, portrait, research interests and contact information that you choose to provide. Your committee participation and awards received also appear on your profile page. Privacy controls have been enhanced, so that you can control if your profile is public or not. The profile was a popular feature of the old site, and we have migrated profiles to the new site. Members-only content can be accessed by logging in with your IEEE SSO; the amount of members-only content is limited at this time, however.

Member-submitted news from the information theory community is a central feature of our site. Due to the popularity of announcing open positions, a new Jobs section has been added alongside the existing News and Events. Announcements appearing on the site are also sent to the mailing list and our social media accounts. To subscribe to the mailing list, see the help at the end of this article. Do you have news or an event to advertise to the information theory community? You can submit your item by logging into the website with your IEEE SSO. Items of interest include conferences, job openings, awards, calls for papers, and requests for volunteers. Submitted items should be of interest to the information theory community and are reviewed by the Online Editor.

The new itsoc.org is also the home of *IEEE Journal on Selected Areas in Information Theory* and the Schools of Information Theory sites. For JSAIT, you can find calls for papers, lists of recent issues, and other important information. For Schools, new features include a detailed technical program display and a list of speakers which is dynamically populated. Organizers of upcoming Schools of Information Theory are encouraged to host their site on itsoc.org.

For IT Society chapters, we have migrated the lists of officers; chapters are encouraged to keep their officer lists up-to-date. Since the web interface has changed, please contact us for instructions on how to maintain your list. For chapters that wish to have a richer presence on itsoc.org, we can help you get started with a microsite.

From a technology perspective, the new site is based on the content management system Drupal. Drupal is an open-source project with wide support from its developer community, and was the best choice for migrating features of the legacy site. The legacy Plone-based web site served us well for 13 years, but Plone was unable to provide modern features in a cost-effective manner. However, 13 years of content from the old site has been migrated to the new site; in most cases historical content may found by using the search feature.

I extend huge thanks to Samir Perlaza, Anand Sarwate, Christian Senger and also Matthieu Bloch for their work in building the new itsoc.org — weekly meetings, sometimes long, gave us a chance to discuss directions and details, and the result is a great site for the members. The developer is Bangalore-based Specbee, and equally huge thanks to CEO Ashirwad Shetty, the project manager Shri Ganesh Hegde and their team. Specbee was consistently responsive to our requests, and built an on-budget site that met all of our specifications. Our community should recognize the past contributions of Nick Laneman, Matthieu Bloch and Anand Sarwate, who did mountains of work to build the Plone-based site. The new site inherits the great ideas and structure that they built.

The IEEE Information Theory Society has a new website at https://www.itsoc.org.

More new features are currently in the works. The soon-to-be-inaugurated IEEE BITS the Information Theory Magazine will have a beautiful new site, including a special feature of hosting video content connected to its articles. The IEEE Information Theory Newsletter is moving to an online format in 2022, and will be hosted at itsoc.org as well. A new outreach page will gather content which explains information theory to more general audiences.

If you have suggestions on how to improve itsoc.org, or about the Society's online presence generally, please feel free to get in touch.

For help on how to use the new site, including login, profiles, posting news, and joining the mailing list, please visit https://www.itsoc.org/help/site. If you have questions or comments, please contact me at oe@itsoc.org

IEEE Information Theory Society Board of Governors Meeting

Location: Remote

Date: March 20th, 2021

Time: The meeting convened at 9:30 am EDT; the meeting adjourned at 3:40 pm EDT

Meeting Chair: Wei Yu

Minutes taken by: Lara Dolecek

Meeting Attendees: Erdal Arikan, Erik Agrell, Matthieu Bloch, Rober Calderbank (#), Marco Dalai (#), Natasha Devroye, Suhas Diggavi, Alex Dimakis, Lara Dolecek, Stark Draper, Andrea Goldsmith, Meir Feder, Christina Fragouli, Sid Jaggi, Ioannis Kontoyiannis (#), Vijay Kumar, Brian Kurkoski, Matt LaFleur (#), Olgica Milenkovic, Prakash Narayan, Enrico Paolini (#), Henry Pfister, Joachim Rosenthal, Parastoo Sadeghi (#), Anand Sarwate, Igal Sason, Emina Soljanin, Vincent Tan, Daniela Tuninetti, Aaron Wagner, Edmund Yeh, Aylin Yener, and Wei Yu.

Non-voting members are denoted by (#).

Business conducted between meetings.

The following motions were issued in December 2020.

> **Motion**: To approve the BoG October 2020 meeting minutes.

The motion passed.

> **Motion**: To permit ISIT 2021 (July 11–16, 2021, Melbourne) to be held as a fully virtual conference.

The motion passed.

> **Motion**: To approve Edmund Yeh as treasurer for the Society starting January 1, 2021.

The motion passed.

> **Motion**: To approve Lara Dolecek as secretary for the Society starting January 1, 2021.

The motion passed.

> **Motion**: To approve Sennur Ulukus as Fellow Committee Selection Committee Chair, for 2021–2022.

The motion passed.

> **Motion**: To approve Changho Suh as the newsletter editor, for 2021–2023.

The motion passed.

> **Motion**: Nominations and Appointments Committee member appointment. The vote was for one of the two candidates or abstain:
>
> 1) Elza Erkip
> 2) Muriel Médard

Elza Erkip was elected.

The following motions were issued in March 2021.

> **Motion**: To make the following appointments in the Conference Committee:
>
> - Li Chen for the term February 1, 2021 through December 31, 2021.
> - Pablo Piantanida for the term February 1, 2021 through December 31, 2023.
> - Henry D. Pfister for the term July 1, 2021 through December 31, 2023.
> - Parastoo Sadeghi for the term July 1, 2021 through December 31, 2024.

The motion passed.

> **Motion**: To make the following appointments in the Membership Committee:
>
> - To appoint Vincent Tan as the chapters liaison for 2021–22.
> - To appoint Lele Wang as the WITHITS Liaison for 2021–22.

The motion passed.

> **Motion**: To appoint Elza Erkip as a member of the IEEE BITS Ad-hoc Steering Committee.

The motion passed.

At 9:30 am EST, ITSoc President Wei Yu called the meeting to order.

Attendees introduced themselves. President Yu thanked everyone for joining the meeting.

> **Motion**: A motion was made to approve the agenda.

The motion passed.

President's Report—Wei Yu

President Yu started by first thanking everyone for their service, welcoming new members, thanking the outgoing members, and

congratulating members on their distinguished awards. The newly elected BoG members are: Natasha Devroye, Massimo Franceschetti, Brian Kurkoski, Anand Sarwate, Vincent Y. F. Tan, Daniela Tuninetti, and Aaron Wagner. President Yu expressed sincere thanks to the outgoing members: Elza Erkip, Vince Poor, and Parastoo Sadeghi. Edmund Yeh is appointed as the Society's Treasurer and Lara Dolecek is re-appointed as the Society's Secretary. Newly appointed committee chairs are: Roy Yates as the Chair of the Cover Dissertation Award Committee, Sennur Ulukus as the Chair of the Fellows Evaluation Committee, Muriel Médard as the Chair of the External Nominations Committee, and Parastoo Sadeghi as the Chair of the Schools Subcomittee. New appointments are: Changho Suh is the new ITSoc Newsletter Editor and Lele Wang is Women-in-Engineering WIE Representative. President Yu next congratulated Society members for their IEEE Medals and Technical Field Awards: Jacob Ziv received the IEEE Medal of Honor, Raymond Yeung received the IEEE Richard W. Hamming Medal, Emmanule Candès received the IEEE Jack S. Kilby Signal Processing Medal, Andrea Goldsmith received the IEEE Leon K. Kirchmayer Graduate Teaching Award, and En-hui Yang received the IEEE Eric E. Sumner Award. He next congratulated 12 new IEEE Fellows from the Society, 5 of whom were nominated by the Society. They are: Stephan Ten Brink, Chan-byoung Chae, Dongning Guo, Tara Javidi, Francis Lau, Sandeep Pradhan, Hyundong Shin, Erik Strom, Edward Tiedemann, Daniela Tuninetti, Pascal Vontobel, and Birsen Yazici.

Next, President Yu went over the membership statistics. He stated that at the moment the Society has 3107 members. By size of the membership, the Information Theory Society is significantly smaller than the Communications Society or the Signal Processing Society. He also presented the data regarding the membership overlap with sister societies, as well as geographic and gender membership distribution.

Afterwards, President Yu discussed the budget and new initiatives. He stated that the overall business model of IEEE is to use the subscription and conference revenue to finance its operation and new initiatives. He stated that for 2020, ITSoc had an interim net surplus of $641K, and the project spending in 2020 was $138K. He stated that for 2021 the operating budget is at the near zero surplus.

Next, he went over the priorities for 2021, which are: 1) FITS Initiative for virtual support of conferences, schools, journal, magazine, newsletter, and distinguished lectures, 2) Magazine for our members, with the cost of $55K according to IEEE, and could be $90K according to Phase II proposal, 3) Schools for our students, supported in part by Padovani and Goldsmith funds, and 4) Outreach for general public including videos and animations.

He next stated that there are $300K in funds available to support new initiatives. He also went over the future challenges regarding conference organization and publication format. He concluded by proposing the date for the next BoG meeting.

Treasurer's Report—Edmund Yeh and Aaron Wagner

Next presentation was given by Edmund Yeh as the new treasurer of the Society. He thanked the former treasurer Aaron Wagner for the guidance. Edmund next presented IEEE accounting in one slide. He explained how the surplus of general funds in a given year is split 50% each to the reserves and to the special projects for the next year. A total of 3% of general funds can also be used for special projects. Next, he went over the 2020 general funds. The expectation based on the information from December 2020 is that there will be $641K in funds available, due to a combined increase in the net revenue from the journals and the conferences. Then, he presented 2021 general funds, which currently have a surplus of $5.4K. He went over the 2020 and 2021 special projects. For 2021, three special projects are approved so far. Edmund encouraged further submissions as there is room for more. Next, Edmund explained what constitutes a new initiative, both for the 3% and for the 50% rule. He stated that for the 3% rule, a new initiative requires BoG but not IEEE approval. It was clarified that JSAIT with open access for one year cannot be counted as new initiative. It was also clarified that many of our 2020 special projects had to be canceled due to COVID-19 pandemic.

FITS Committee Update—Brian Kurkoski and Matthieu Bloch

Next presentation was given by Brian Kurkoski and Matthieu Bloch. Brian started the presentation by stating the new itsoc.org website was ready to go live. He showed that there are many new features on the website. Preview is available for viewing and the scheduled date to go live is Monday, March 29 2021. He also discussed the status of the newsletter microsite and online efforts to support outreach. He next discussed the development of the itsoc.org website, and stated that all of their design goals have been met, and that nearly all content from the old site has been migrated to the new site. Brian thanked Samir Perlaza, Anand Sarwate, Christian Senger, Matthieu Bloch and the team at Specbee particularly the project manager Shri Ganesh Hegde, for all their hard work in making this project happen. Brian showed the snapshot of the new landing page.

Brian clarified that one can create a new profile with the IEEE single sign on, but may also need manual intervention by him. He also clarified that all data migration is already completed and further changes will be done manually. He also showed JSAIT microsite and Schools microsite. A BoG member asked how to collect outreach materials, as videos have already attracted 160k views. A special site where all the materials would be was requested. Brian asked for feedback and community participation, and provided the status and the anticipated cost for the Online Newsletter and the Outreach websites.

Next, Matthieu provided an update on the development of the Conference website. He stated that he has had weekly meetings with the developers for the back end. He showed the snapshot of front end. He stated that the front end is already done, and that the back end is now being worked on. One idea would be to tag talks with keywords to navigate the talks more easily. He concluded by stating that further updates will be provided at the next BoG meeting and thanking Brian for having done a fantastic job.

IT Schools Committee Update—Parastoo Sadeghi and Matthieu Bloch

Next presentation was given by Parastoo Sadeghi. She first thanked Stark Draper, Christian Senger, and Matthieu Bloch for their service. She provided the following updates. 2020 IEEE European School of Information Theory (ESIT 2020) was held virtually in November 2020. There were 159 registered participants. Total

expenditure was around 4K euros. There was a surplus of around 11K euros due to having to switch to the virtual format. 2021 IEEE North American School of Information Theory (NASIT 2021) will be held virtually in June 2021. She stated that enough local sponsorship was secured and no funds are requested from ITSoc. Lectures will be live and lecturers are confirmed.

Next, Parastoo went over the status of the IEEE IT Society Summer School in India to be held virtually in June 2021. Revised funding budget of $6K is requested. She went over the planned format and provided the list of confirmed lecturers.

Next, Parastoo went over the status of the Virtual East Asian School of Information Theory (EASIT 2021), to be held in August 2021. She stated that this is a new initiative. Lectures will be prerecorded. During the school, lecturers will go over their lectures again live with pauses and allow for Q&A. Several lecturers are confirmed.

Parastoo then went over the list of the upcoming IT Schools planned for 2022 and their status, before the following motions were issued.

> **Motion 1**: IEEE Information Theory Society to support the JTG/IEEE ITSoc Summer School 2020 (delayed to 2021) with a budgetary allocation of $6K.
>
> **Motion 2**: IEEE Information Theory Society to support the 2020 (delayed to 2021) East Asian School of Information Theory (EASIT) with a budgetary allocation of $3.6K

Both motions passed.

Conference Committee Updated—Vijay Kumar

Next presentation was given by Vijay Kumar. He thanked outgoing conference committee members and welcomed incoming members. He explained the staggered terms of the current members of the committee.

Next, he presented the status of the ITW 2021 to be held in Kanazawa, Japan on Oct 17–21, 2021. He went over the organizing committee and focus topics for the workshop. The workshop as of now will be held either virtually or in a hybrid mode, with the final decision on the format planned for May 10, 2021.

Next, Vijay went over the status of ISIT 2022 to be held in Helsinki, Finland. He went over the organizing committee and stated that the website is up at isit2022.org; TPC co-chairs are in the process of selecting plenary speakers; venue contract is signed with Tavicon; and the organizers are in communication with IEEE regarding insertion of a suitable "force majeure" clause.

Afterwards, Vijay presented the status of ITW 2022 to be held in Goa, India. Options being considered are virtual and hybrid. Vijay went over the organizing committee, and presented two conference dates, one being in November and the other one being in September 2022, along with the preferred choice of venue. The organizing committee has proposed three different operating points, with a varying degree of in-person participation. Organizing committee plans to have a firm proposal in the October 2021 BoG meeting. Committee is also exploring non-hotel venues and is in close contact with other conference organizers for guidance and suggestions.

Next update was regarding ISIT 2021. The conference will be held virtually in Melbourne, Australia in July 2021. Parastoo Sadeghi and Emanuele Viterbo provided the most up-to-date status. Updates include:

- 10% venue deposit was fully refunded and the contract was formally cancelled;
- Conference Catalysts was selected as Virtual platform (same as ISIT'20) and the contract was executed;
- PCO ICMSA will handle only registrations, promotion, sponsorship, and finance; contract addendum was executed;
- 5 Plenary speakers were announced and their talks will distributed over July 12–20 (9 days);
- A record of 8 tutorials were announced and are scheduled on Sat/Sun, July 17 and 18, 2021;
- There were 801 submitted papers, roughly 5% more than in 2020;
- Notification of acceptance will be extended from April 23 to 30 due to Texas storm which affected the CMS paper review system;
- Registration portal will open on April 30;
- Final camera ready versions to be uploaded by May 10, and short (4min) and long (20min) videos to be uploaded by May 31;
- Tweets and email blasts will be sent to give updates on the program;
- Call for Recent Results is coming soon;
- Organizing committee is planning virtual social events, awards ceremony, and industry sessions.

Next, tentative registration fees were presented. There will be separate paper fee and attendance fee. There will be one registration fee per paper.

Afterwards, an update on the status of ITW 2020 (Virtual, postponed to 2021) was provided. The conference will be held virtually April 11–15, 2021. Technical program is available online. There are 6 plenaries, 2 tutorials, 25 invited talks in 5 themed sessions, and 104 contributed talks in 21 sessions. Papers are presented with a pre-recorded 20-minute videos and live Q&A sessions, 10 minutes per paper, including 5 minutes of live presentation. Registration fee model is one registration per paper. So far, non-author registration is low.

The following motion was discussed in an executive session.

> **Motion**: To make an exception and to provide technical co-sponsorship (TCS) to the 2021 edition of REDUNDANCY while having the IT Society pay for the TCS fees.

Motion passed.

Transactions on Information Theory Update—Igal Sason and Erdal Arikan

Next presentation was given by Igal Sason in his role as the Editor-in-Chief of the IEEE Transactions of Information Theory.

Igal presented the following statistics: Sub-to-first review: average is 29 weeks, and median is 26 weeks. Sub-to-Online publication: average is 57 weeks, and median is 50 weeks (referring to the Q4 of 2020).

These numbers are in spite of the significant extension provided by EiC during the last year (since March 18, 2020) due to the pandemic. Despite considerable extensions, the sub-to-pub statistics are about the same as 3 years ago. Extensions were given as follows. For authors, minor revision was changed from 45 to 90 days, and major revision was changed from 90 to 150 days. For reviewers, first review was extended from 75 to 120 days, and the review of a revision from 45 to 90 days.

Paper length statistics for the last 6 months (Nov. 20–April 21) are 4029 pages/237 papers = 17 pages/paper. Standard deviation: 6.8 pages.

Igal stated that the Special Issue devoted to V. I. Levenshtein is forthcoming. There are 27 papers in the issue, and one paper was routed to the regular issues. Olgica Milenkovic was the Guest Editor-in-Chief for this special issue.

Next, Igal presented the candidates for the position of the Associate Editors of the IT Transactions.

BoG approved the following candidates:

1) Antonia Wachter-Zeh—Coding Theory
2) Jun Chen—Shannon Theory
3) Sheng Yang—Communications
4) Shirin Jalali—Probability and Statistics
5) Yuejie Chi—Statistical Learning

The following motion was issued:

Motion: to take a short break.

Motion passed.

Meeting resumed at 12:45 pm EST.

JSAIT Update—Andrea Goldsmith and Jeff Andrews

Next presentation was given by Andrea Goldsmith in her role as the Editor-in-Chief of JSAIT. She started by going over the executive summary. Next, she went over the first three published issues. Overall acceptance rate is 64%. She next presented top highly cited papers that have appeared in JSAIT. Upcoming issues are as follows:

- Seventh issue: Coding for Data Management and Delivery in Networks. Papers due May 1.
- Sixth issue: Coded Computing. Closed March 15.
- Fifth issue: Sequential, Active, and Reinforcement Learning. Closed October 15. Expected publication is April 2021.
- Fourth issue: Privacy and Security of Information Systems. Closed August 15. Publication is imminent.

Andrea next presented a working list of future topics, and provided submission data per issue. The first issue on deep learning had the most submissions.

She next explained that the first 12 pages are free, and that page charges are $200 per page for up to 15 total pages, and that the charges are waived for financial hardship and for tutorial papers. One issue she pointed out is that sometimes authors move reviewed material to supplementary material, and that is not appropriate.

Andrea next went over the JSAIT leadership structure. Steering committee members currently serve a 5-year term. In the future this term may be reduced. She also went over the editorial board and the industrial advisory board. She discussed current startup issues that are being worked on: better onboarding of guest editors, rooting out Manuscript Central issues, and better informing authors about the page charge policy. She presented issues for discussion, which included how to utilize industrial advisory board, and most importantly, how to get more unsolicited proposals.

BITS Magazine Update—Christina Fragouli and Rob Calderbank

Christina started the presentation. She stated that the BITS Magazine is a major undertaking with possibly very high impact factor, and is a new opportunity for us to reach wide audience.

Rob next went over the editorial board, columns, and content. He also thanked Christina for her service. He stated that ideas and suggestions on the columns and contents should be sent to him via email. Current column editors are: Muriel Médard with the focus on connecting to other communities, Alon Orlitsky with the focus on explaining technical terms as an opportunity to engage student members, and Aaron Wagner with the focus on the next big thing. Rob next went over what is in the works, both in terms of people and topics. He clarified for prospective authors that articles should be the same format as articles in the IEEE Signal Processing Magazine, and that they will welcome equations when they are needed to tell the story.

Christina continued the presentation by thanking Rob for popularizing the magazine. She went over the steering committee and the advertising campaign for the magazine. The cost of the campaign is $15K. Inaugural issue is coming in Summer 2021. She next presented the new website for the magazine, and thanked Anand Sarwate and Brian Kurkoski for their help in launching it. Christina reiterated that the committee welcomes feedback and input from the community members. She next went over the print version of the magazine.

She mentioned that as the magazine is projected to initially lose money, at the time of application we opted for common design support from IEEE to reduce costs. However, for the cover illustrations we will be using a professional illustrator. BoG members had suggestions on featuring an article in the cover page design or the topics, and linking papers to associated videos that are already available.

Christina clarified pricing fees from IEEE including for illustrations but these reuse existing images and are typically not original art. A BoG member suggested external resources to be used to create illustrations that go along with the articles.

The following motions were issued.

> **Motion 1**: To replace U. Mitra and D. Costello with E. Soljanin and R. Yeung in the BITS Steering Ad Hoc Committee.
>
> **Motion 2**: To use $20K new initiative funding in 2021 in support of BITS promotion.

A friendly amendment to increase the funding to a total of $40K was made.

There were no objections to the amendment.

The motions passed.

Information in Small Bits Cartoon—Christina Fragouli

Next presentation was given by Christina. She asked for funding to support the completion of the cartoon.

The following motion was issued:

> **Motion**: To use $20K new initiative funding to produce the remaining two chapters of information in small bits in cartoon format.

The motion passed.

Diversity and Inclusion Committee—Stark Draper

Next presentation was given by Stark Draper is his role as the Chair of the of ITSoc Diversity and Inclusion (D&I) Committee.

Stark started his presentation by thanking the members of the committee for their service. He went over the codes of conduct. Stark clarified the difference between bylaws, which are rules, and best practices, which are customs and past wisdom. He next presented the plan for an ITSoc D&I Climate survey. He also thanked Nihar Shah who has done a similar survey in the machine learning community and has shared ideas on this matter.

To further support outreach activities in the society, the following motions were presented.

> **Motion 1**: To approve $1000 for support of conducting the ITSoc D&I Climate survey.
>
> **Motion 2**: Approve $560 for support of scholarships for undergraduates from underrepresented groups to attend ISIT and ITSoc schools

Both motions passed.

Nominations & Appointments / Constitution & Bylaws Committee—Emina Soljanin

Next presentation was given by Emina Soljanin as the chair of the Nominations and Appointments Committee. Emina thanked outgoing members and welcomed new members of the Wyner Committee and the Paper Award Committee. She stated that the committee will appoint replacements for the members whose term is ending in 2021, after the feedback on this year's operations.

Next, Emina presented on behalf of the Constitution and Bylaws Committee. She explained that there are currently quite a few constraints on who can be a member of the Wyner and Paper Awards Committees, making it hard to diversify under these constraints.

Discussion on Future Directions (Executive Session)—Wei Yu

Discussions on future directions on publications and open access were held.

The following motion was issued.

> **Motion**: To extend the meeting by half an hour.

Motion passed.

Discussions on diversity and inclusion were held. The following motions were issued:

> **Motion 1**: That the IEEE Information Theory Society reaffirms its support for open scientific exchange irrespective of all barriers.
>
> **Motion 2**: Report our wishes to TAB level D&I committee for IEEE to provide equal access all regions for scientific exchange.

Both motions passed.

The meeting adjourned at 3:40 pm EST.

Recent Publications

IEEE Transactions on Information Theory

Table of content for volumes 67(4), 67(5)

Vol. 67(4): Apr. 2021.

Vol. 67(5): May 2021.

Vol. 67(6): June 2021.

PART I of TWO PARTS

SPECIAL ISSUE: "FROM DELETION-CORRECTION TO GRAPH RECONSTRUCTION: IN MEMORY OF VLADIMIR I. LEVENSHTEIN"

GUEST EDITORIAL

SPECIAL ISSUE PAPERS

Vol. 67(6): June 2021.

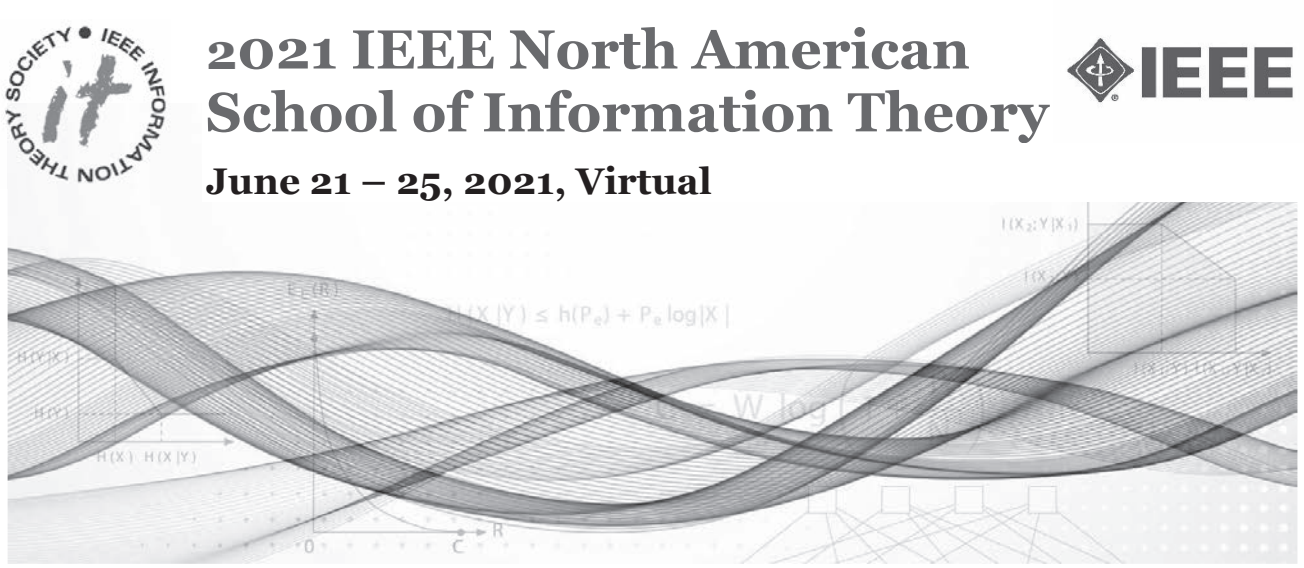
PART II of TWO PARTS

IEEE Journal on Selected Areas in Information Theory

Table of content for volume 2(1)

Vol. 2(1): Mar. 2021.

ISSUE ON PRIVACY AND SECURITY OF INFORMATION SYSTEMS



Call for Posters

Important Dates:

Poster Registration Deadline (Title, abstract, and authors): June 10, 2021
Final Poster Submission (Full poster): June 13, 2021

We would like to invite students and postdoctoral research fellows to submit a poster to be presented during the school. The idea of the poster sessions is to provide an informal and relaxed setting for students to interact with other students and faculty to get experience in presenting and to discuss their ideas and their research in all areas of information theory. We encourage more junior graduate students who do not yet have original research to present a tutorial-style poster on some topic of interest to the students. To more advanced graduate students and postdoctoral fellows we note that previously published results are completely acceptable for presentation at the school.

The poster submission is a two-stage process:

1) The first stage is a registration of interest by submitting the title, abstract, and list of authors (deadline June 10, 2021). Use https://edas.info/newPaper.php?c=28512 (or https://edas.info -> Submit paper -> NASIT 2021) to register your poster.
2) The second stage is the submission of the full poster (deadline June 13, 2021), which authors will present virtually.

Both registration and submission will take place through https://edas.info. A best poster award will be given to the best poster based on content and presentation.

2021 IEEE North American School of Information Theory

The 2021 IEEE North American School of Information Theory (NASIT) will be held **Monday, June 21 to Friday, June 25, 2021.**

The school will be a **virtual** event featuring long-format **tutorials** from leading experts and interactive **poster sessions**.

Our tutorial lecturers are

David Tse, Stanford University, **Padovani Lecturer**

Michelle Effros, California Institute of Technology

Negar Kiyavash, École Polytechnique Fédérale de Lausanne

Douglas Stebila, University of Waterloo

Wei Yu, University of Toronto

Lizhong Zheng, Massachusetts Institute of Technology

In addition to attending the tutorials, graduate students and postdoctoral researchers will have the opportunity to discuss their work in interactive poster sessions. The idea of the sessions is to provide an informal and relaxed setting for students to get experience in presenting and to discuss their ideas and their research. Posters are not refereed, and presenting previously published results as well as tutorial-style posters are welcome. We encourage registration of posters by June 10, 2021.

For further details: **http://conferences.ece.ubc.ca/nasit2021**

NASIT organizers

General Co-chairs
Lutz Lampe, Lele Wang
Treasurer
Anas Chaaban
Advisor
Ian Blake

NASIT sponsors / partners

Pacific Institute for the Mathematical Sciences

CENTER FOR SCIENCE OF INFORMATION
NSF SCIENCE & TECHNOLOGY CENTER
SOIHUB.ORG

11th International Symposium on Topics in Coding

Montréal, Québec, Canada, August 30th – September 3rd, 2021

General Co-Chairs
Catherine Douillard, IMT Atlantique, France
François Gagnon,
École de technologie supérieure, Canada

Vice Co-Chairs
Georges Kaddoum,
École de technologie supérieure, Canada
François Leduc-Primeau,
École Polytechnique de Montréal, Canada

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University of Toronto, Canada

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Vincent Gripon, IMT Atlantique, France

Local Arrangements Co-Chairs
Christian Cardinal,
École Polytechnique de Montréal, Canada
Ghyslain Gagnon,
École de technologie supérieure, Canada

Sponsorship and Publicity Chair
Warren J. Gross, McGill University, Canada

Co-sponsored by the
IEEE Information Theory Society

Call for Papers

The 11th International Symposium on Topics in Coding* will be held from Monday August 30th to Friday September 3rd, 2021, in Montréal, Québec, Canada. The symposium will be an opportunity to acquire a broad overview of the current status of advanced research in all areas of coding theory and its applications. All original contributions will be considered, in both theoretical and applied fields. Topics for submission include, but are not limited to, the following:

- Error-control coding
- Turbo, LDPC, polar, and product-like codes
- Bit-interleaved coded modulation
- High-throughput decoding
- Hardware and software implementations
- Performance bounds
- Iterative equalization and detection
- Message-passing algorithms
- Joint source-channel coding
- FEC for optical communications
- Coding for wireless communications
- Coding for storage
- Coding for distributed computation

In addition, papers that broaden the reach of coding, including emerging fields and novel applications of coding, are encouraged. The symposium will include regular papers for oral and poster sessions as well as invited papers. Accepted and presented papers/posters will appear in the symposium proceedings and in IEEEXplore.

Submissions

Authors are invited to submit a full manuscript (not exceeding 5 pages in double-column format) via the symposium website:

http://www.istc2021.org

Important Dates

Paper submission deadline: . . . . . **April 25th, 2021**
Notification of acceptance: . . . . . **July 5th, 2021**
Camera-ready paper due: . . . . . **August 1st, 2021**

For further information regarding paper submission, registration, accommodation, and travel, please consult the symposium website.

* Formerly the International Symposium on Turbo Codes & Iterative Information Processing.

Symposium Committee

General Co-Chairs
Brian M. Kurkoski JAIST
Tadashi Wadayama Nagoya Inst. of Tech.
Shun Watanabe Tokyo Univ. of A&T

Finance
Shigeaki Kuzuoka Wakayama Univ.

Local Arrangement
Hiroshi Fujisaki Kanazawa University

Publicity
Elsa Dupraz IMT Atlantique
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Publications
Lei Liu JAIST
Kazushi Mimura Hiroshima City Univ.

Registration
Akiko Manada Nagaoka Univ. of Tech.

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IEEE Information Theory Society

Financial Support
- Kayamori Foundation of Informational Science Advancement
- Huawei
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- Entropy

Photo: Max Pixel

ITW2021

October 17–21, 2021 in Kanazawa, Japan

The 2021 IEEE Information Theory Workshop (ITW2021) is currently scheduled to be held October 17-21, 2021 as a hybrid in-person/online event. The in-person component will be held at Kanazawa Bunka Hall in Kanazawa, Japan. If it becomes necessary to hold an online-only event, every effort will be made to provide networking opportunities and an interactive experience, while remaining a venue for dissemination of top-quality research in information theory.

Kanazawa is located in the middle of Honshu, the main island of Japan, and can conveniently be reached by train or airplane from Tokyo. Bordered by the Sea of Japan and the Japanese Alps, Kanazawa was also recognized as the world's first UNESCO Creative City in the field of crafts and folk art. Kanazawa Bunka Hall is centrally located in Kanazawa, with easy access to hotels, restaurants and transportation.

Call for Papers

Interested authors are invited to submit papers describing novel and previously unpublished results on all areas on coding and information theory, including but not limited to the focus topics below:

- Low-Latency Communications
  - Low-latency communications in multi-user information theory
  - Low-latency communications for wireless applications
  - Application of low-latency communications techniques
- Information-Theoretic Security
  - Physical layer security
  - Secure computation under information-theoretic security
  - Information-theoretic security for privacy
- Machine Learning for Communications
  - Neural networks for communication systems
  - Machine learning-based transceiver algorithms
  - Information-theoretical understanding of deep learning
- Codes in the Cloud
  - Coded computation
  - Private information retrieval
  - Distributed storage

Paper Submission

Authors should submit papers according to the guidelines which will later appear at:

http://itw2021.org

Accepted papers will appear in the symposium proceedings. To be published in IEEE *Xplore*, an author of an accepted paper must register and present the paper. IEEE does not guarantee inclusion in IEEE *Xplore*.

Paper submission deadline ~~**May 7**~~ **May 14, 2021**

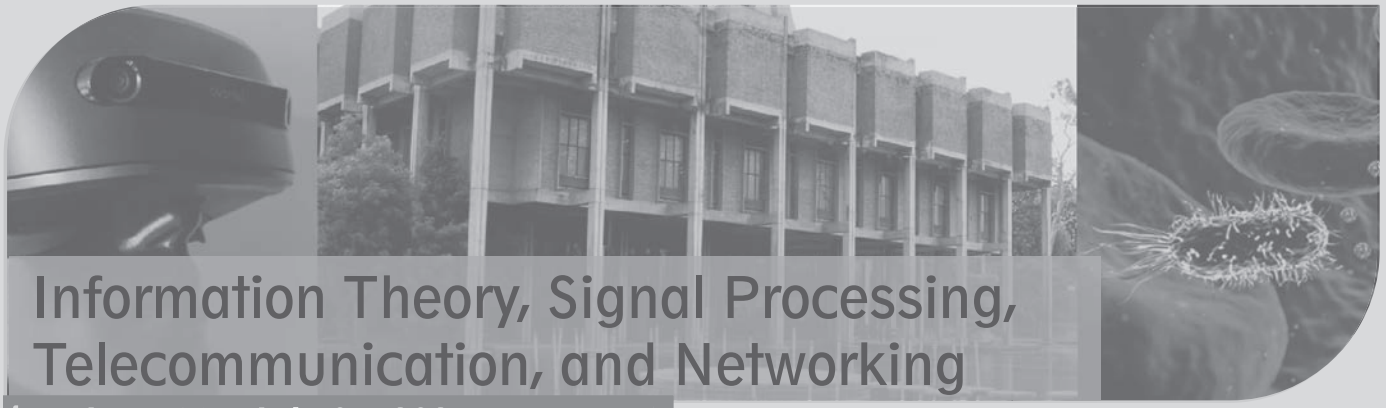
Acceptance notification **August 2021**

Further information will be posted on the symposium web site as it becomes available.

JTG/IEEE ITSoc Summer School 2021

Department of Electrical Engineering

Indian Institute of Technology Kanpur



Information Theory, Signal Processing, Telecommunication, and Networking

June 28 - July 01, 2021

Welcome to the Twelfth Joint Telematics Group (JTG)/IT Society Summer School to be organized by the Department of Electrical Engineering at IIT Kanpur. The school was seeded by the JTG to serve as a platform for distinguished researchers to deliver lectures spanning contemporary research areas in signal processing, telecommunication, networking and information theory, for students, faculty, and researchers from all over India.

Brief Note on JTG: The JTG, comprising of faculty from various IITs and IISc, was formed with the aim of imparting cutting-edge technical knowledge in signal processing, telecommunications, networking, and allied ields to engineers, scientists, faculty and industry personnel from all over India. The JTG organizes the prestigious National Conference on Communication (NCC), held annually across member IITs and IISc.

2021 Padovani Lecturer: Prof. Muriel Médard

Muriel Médard is the Cecil H. Green Professor in the Electrical Engineering and Computer Science (EECS) Department at MIT. She leads the Network Coding and Reliable Communications Group at the Research Laboratory for Electronics at MIT. Her research interests include network coding, information theory, wireless networks, and optical networking.

https://www.rle.mit.edu/people/directory/muriel-medard/

Course 1: Introduction to Molecular Communications

This course will provide a detailed introduction to state-of-the-art molecular communications. Beginning with a demonstration of how molecular communication fits with the standard framework for analyzing communication systems, it will discuss various models for molecular communication, effective communication strategies, and information-theoretic analysis. The course will also include a practical perspective on the experimental validation of these results. The participants will be introduced to two successful, low-cost, tabletop experimental systems used in published research.

Speaker: Prof. Andrew Eckford

Andrew Eckford is an Associate Professor in the Department of Electrical Engineering and Computer Science at York University, Toronto, Ontario. His research interests include the application of information theory to biology, and the design of communication systems using molecular and biological techniques.

http://www.andreweckford.com/

Course 2: Machine Learning in Communications

The course will introduce concepts in statistical learning theory, including hypothesis classes and their complexity, followed by VC dimensions and generalization bounds in terms of VC dimensions, estimation theoretic interpretation of machine learning algorithms. Popular machine learning algorithms will be analyzed as ML and MAP estimators of appropriate generative models. Deep neural networks, an information-theoretic interpretation of neural networks based on the idea of an information bottleneck, and the role of point processes in machine learning will also be described.

Speaker: Prof. Harpreet S. Dhillon

Harpreet S. Dhillon joined Virginia Tech in 2014, where he is currently Associate Professor of Electrical and Computer Engineering and the Elizabeth and James E. Turner Jr. '56 Faculty Fellow. His research interests include communication theory, wireless networks, stochastic geometry, geolocation, and machine learning.

https://www.dhillon.ece.vt.edu/

Summer School 2021 will also include faculty talks in emerging areas in signal processing, communications, and information theory.

Registration Fees

Students and Postdocs
Rs. 100+ 18% GST

Faculties and Govt/Industry Professionals
Rs. 500 + 18% GST

Online School

Due to COVID-19 restrictions, the 12th JTG/IEEE IT Society summer school will be a virtual event for the first time in its history

Contact

For any query send us a mail at jtg2021@iitk.ac.in

or write to us at

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http://www.iitk.ac.in/jtg2021

Committee Members

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Changho Suh
KAIST

Financial
Youngchul Sung
KAIST

Publicity
Byonghyo Shim
Seoul National University

Industry Funding
Kwang Soon Kim
Yonsei University

Sidharth Jaggi
University of Bristol

Vincent Tan
National University of Singapore

Lingfei Jin
Fudan University

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EASIT 2021 (Virtual), Aug 3-6

The 2021 IEEE East Asian School of Information Theory (EAIST) will be held **August 3 (Tue) to 6 (Fri)**. This is the Inaugural East Asian School of Information Theory. The School will be a virtual event featuring long-format tutorials from leading experts and interactive poster sessions.

Lecturers

Yuejie Chi
Carnegie Melon University
Goldsmith Lecturer
2021

Changho Suh
KAIST
Distinguished Lecturer
2020-22

Vincent Tan
National University of Singapore
Distinguished Lecturer
2018-19

Lingfei Jin
Fudan University

Lalitha Sankar
Arizona State University
Distinguished Lecturer
2020-22

Deniz Gunduz
Imperial College London
Distinguished Lecturer
2020-22

Poster Session

In addition to attending the tutorials, graduate students and postdoctoral researchers will have the opportunity to discuss their work in **interactive poster sessions.** The idea behind the sessions is to provide an informal and relaxed setting for students to get experience in presenting and to discuss their ideas and research. Posters are not refereed, and presenting previously published results as well as tutorial-style posters are welcome.

For further details: http://csuh.kaist.ac.kr/easit

58th Allerton Conference

ON COMMUNICATION, CONTROL, & COMPUTING

THE FOLLOWING EMAIL ANNOUNCEMENT CONCERNING THE CANCELLED 2020 ALLERTON CONFERENCE IS BEING SENT TO YOU ON BEHALF OF PROFESSOR ALEJANDRO DOMINGUEZ-GARCIA AND PROFESSOR MAX RAGINSKY.

Hello everyone —
Based on preliminary discussion over Zoom on Tuesday, April 7th, and on the subsequent survey, the votes are overwhelmingly in favor of postponing the Allerton Conference to Fall 2021. While this was not an easy decision to make, as the Allerton Conference is an intellectual highlight of the Fall semester for many of us, we feel that this is a prudent course of action in the face of uncertainty surrounding the COVID-19 pandemic.
Best regards,

Alejandro Dominguez-Garcia and Max Raginsky
Allerton Conference Co-Chairs

Call for Papers: Due July 8, 2021

Manuscripts can be submitted from June 12-July 6, 2021 with the submission deadline of July 6th being firm. Please follow the instructions at **allerton.csl.illinois.edu**.

CONFERENCE CO-CHAIRS | ALEJANDRO DOMINGUEZ-GARCIA AND MAX RAGINSKY

INFORMATION FOR AUTHORS | Regular papers suitable for presentation in 20 minutes are solicited. Regular papers will be published in full (subject to a maximum length of eight 8.5" x 11" pages, in two column format) in the Conference Proceedings. Only papers that are actually presented at the conference and uploaded as final manuscripts can be included in the proceedings, which will be available after the conference on IEEE Xplore. For reviewing purposes of papers, a title and a five to ten page extended abstract, including references and sufficient detail to permit careful reviewing, are required.

IMPORTANT DATES | 2021

JULY 6 — Submission Deadline

AUGUST 3 — Author Notification Authors will be notified of acceptance via email by August 6, 2020, at which time they will also be sent detailed instructionsfor the preparation of their papers for the Conference Proceedings

AFTER AUGUST 7 — Registration Opens

SEPTEMBER 29 - OCTOBER 1 — Conference Dates

September 28 — Opening Tutorial Lectures at the Coordinated Science Lab, University of Illinois at Urbana-Champaign: Mihailo Jovanovic, University of Southern California and Tamara Broderick, Massachusetts Institute of Technology

September 30-2 — Conference Sessions at the University of Illinois Allerton Park & Retreat Center. The Allerton House is located 26 miles southwest of the Urbana-Champaign campus of the University of Illinois in a wooded area on the Sangamon River. It is part of the 1,500 acre Robert Allerton Park, a complex of natural and man-made beauty designated as a National natural landmark. Allerton Park has 20 miles of well-maintained trails and a living gallery of formal gardens, studded with sculptures collected from around the world.

Plenary Lecture: TBA

SEPTEMBER 29 — Final Paper Deadline Final versions of papers that are presented at the conference must be submitted electronically in order to appear in the Conference Proceedings and IEEE Xplore.

PAPERS PRESENTING ORIGINAL RESEARCH ARE SOLICITED IN THE AREAS OF:

- Biological Information Systems
- Coding Techniques and Applications
- Coding Theory
- Data Storage
- Information Theory
- Multiuser Detection and Estimation
- Network Information Theory
- Sensor Networks in Communications
- Wireless Communication Systems
- Intrusion/Anomaly Detection and Diagnosis
- Network Coding
- Network Games and Algorithms
- Performance Analysis
- Pricing and Congestion Control
- Reliability, Security and Trust
- Decentralized Control Systems
- Robust and Nonlinear Control
- Adaptive Control and Automation
- Robotics
- Distributed and Large-Scale Systems
- Complex Networked Systems
- Optimization
- Dynamic Games
- Machine Learning and Learning Theory
- Signal Models and Representations
- Signal Acquisition, Coding, and Retrieval
- Detection and Estimation
- Learning and Inference
- Statistical Signal Processing
- Sensor Networks
- Data Analytics
- Power System Control and Optimization

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ILLINOIS

The Allerton Conference is co-sponsored by the **Coordinated Science Lab** and the **Department of Electrical and Computer Engineering.**

WEBSITE | **allerton.csl.illinois.edu** EMAIL | **amellis@illinois.edu**

REDUNDANCY 2021

XVII International Symposium "Problems of Redundancy in Information and Control Systems" is the conference that covers a wide area of information and communication systems.

IMPORTANT DATES

Regular paper submission deadline: 1 July 2021
Notification of acceptance: 31 August 2021
Camera ready paper submission: 1 October 2021

25-29 OCTOBER 2021

MIEM HSE & SKOLTECH
MOSCOW, RUSSIA

MORE INFORMATION

MIEM.HSE.RU/REDUNDANCY2021

COVERED TOPICS

- Information and coding theory
- Mobile and wireless communications
- Telecommunication protocols
- Internet of things
- Data security
- Blockchain

Call for nominations for the second **Editor-in-Chief** of the
IEEE Journal on Selected Areas in Information Theory (JSAIT)

Nomination Deadline: Sept. 1, 2021

The IEEE Journal on Special Areas in Information Theory (JSAIT) is an interdisciplinary journal which published its first issue in May 2020. Its mission is it to publish high quality technical papers on all aspects of information theory, including at the intersections of information theory with fields such as machine learning, statistics, genomics, neuroscience, theoretical computer science, and physics, as well as important and timely topics firmly within the domain of information theory.

JSAIT has published five special issues, with several more in the pipeline, as can be seen at the JSAIT webpage: https://www.itsoc.org/jsait

Prof. Andrea Goldsmith, Dean of Engineering at Princeton University, is currently serving as the first Editor-in-Chief (EiC). JSAIT is administered by a Steering Committee, whose current members are Jeffrey Andrews, Rob Calderbank, Negar Kiyavash, and H. Vincent Poor. ***The Steering Committee requests nominations for the second EiC*** to succeed Dr. Goldsmith, who completes her 3 year term in December 2021.

The selected EiC would assume this important role on Jan. 1, 2021 for a term of three years. The successful candidate will appoint and oversee an Editorial Board of Senior Editors, who are established experts who assist the EiC in mentoring Guest Editorial teams for each special issue. The EiC's duties also include soliciting and vetting proposals for special issue topics and ensuring a high standard of quality for the journal.

Eligibility: The successful candidate will have a strong record of research excellence in information theory and related fields, and have demonstrated excellence in previous leadership activities. The candidate is expected to have high professional stature and previous editorial board experience.

Selection Process: The steering committee will review all the received nominations and recommend an EIC appointment to the Board of Governors, which makes the ultimate appointment.

Nomination Process: Please email the Steering Committee Chair, Jeffrey Andrews (jandrews@ece.utexas.edu), with a short indication of interest that includes the nominee's key qualifications and a summary of editorial experience. Inclusion of a curriculum vitae is optional. Self-nominations are welcome. If you have any questions or concerns regarding the nomination process, please contact any member of the Steering Committee.

IEEE Journal on Selected Areas in Information Theory

Special Issue on Information Theoretic Foundations of Future Communication Systems

Information theory, starting with Shannon's groundbreaking work, has fundamentally shaped the way communication systems are designed and operated. Information theoretic principles form the underpinnings of modern wireless and wired networks. This special issue will focus on exploring how new advances in information theory can impact future communication systems. Next generation wireless networks will incorporate a large number of devices, dense and intelligent antenna arrays, and operate in higher frequencies. New task-aware communication modalities, such as sensing, learning and inference, will accelerate the shift from human-to-human to machine-to-machine type communications. Accordingly, communication systems will be designed with capacity, latency and accuracy in mind. Increasingly complex communication tasks will need to be carried out on devices with energy and hardware constraints, but will also be able to take advantage of in-network storage and computation.

Authors are encouraged to submit their work on topics including, but not limited to:

- Communication for learning, inference, sensing
- Communication in high frequency (mmWave, THz, optical) bands
- Communication models and analysis emerging from new protocol requirements
- Communication models and analysis that account for the advances in physics and electromagnetism
- Energy-efficient communication, energy harvesting
- Finite blocklength information theory
- Fundamental limits of communication-computing convergence
- Hardware/complexity constrained communications
- Latency and age of information
- Multi-user information theory, including uncoordinated massive random access

Important Dates:
Manuscript Due: September 1, 2021
Acceptance Notification: February 15, 2022
Camera-ready Version: March 5, 2022
Expected Publication: March/April 2022

Guest Editors: Elza Erkip (Lead), Giuseppe Durisi, Robert Heath, Thomas Marzetta, Petar Popovski, Sennur Ulukus, Meixia Tao

Submission Guidelines:
Submitted papers should be of sufficient length and detail for review by experts in the field. Prospective authors must follow the *IEEE Journal on Selected Areas in Information Theory* manuscript submission guidelines in JSAIT Author Information webpage. All papers should be submitted through https://mc.manuscriptcentral.com/jsait-ieee

Conference Calendar

DATE	CONFERENCE	LOCATION	WEB PAGE	DUE DATE
June 14–23, 2021	IEEE International Conference on Communications (ICC)	Montréal, Canada (virtual)	https://icc2021.ieee-icc.org/	Passed
June 21–25, 2021	The 53rd Annual ACM Symposium on the Theory of Computing (STOC)	Virtual Conference	http://acm-stoc.org/stoc2021/	Passed
June 15–18, 2021	International Centre for Theoretical Physics (ICTP): Youth in High-Dimensions	Trieste, Italy (virtual)	http://indico.ictp.it/event/9596/	June 7
June 21–25, 2021	IEEE North American School of Information Theory (NASIT)	University of British Columbia, Vancouver, Canada (virtual)	http://conferences.ece.ubc.ca/nasit2021/	June 13
June 28–July 1, 2021	JTG/IEEE ITSoc Summer School	Indian Institute of Technology Kanpur (virtual)	http://www.iitk.ac.in/jtg2021/	—
July 12–20, 2021	IEEE International Symposium on Information Theory (ISIT)	Melbourne, Victoria, Australia (virtual)	https://2021.ieee-isit.org	Passed
July 18–24, 2021	The 38th International Conference on Machine Learning (ICML)	Virtual Conference	https://icml.cc/	Passed
August 3–6, 2021	IEEE East Asian School of Information Theory (EASIT)	KAIST, Daejeon, South Korea (virtual)	http://csuh.kaist.ac.kr/easit/	—
August 15–19, 2021	The 34th Annual Conference on Learning Theory (COLT)	Boulder, Colorado, USA (hybrid)	http://learningtheory.org/colt2021/index.html	Passed
August 30–September 3, 2021	The 11th International Symposium on Topics in Coding (ISTC)	Montréal, Canada (hybrid)	https://istc2021.org/	Passed
September 27–30, 2021	The 22nd IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)	Lucca, Italy (hybrid)	https://www.spawc2021.com/	Passed
September 29–October 1, 2021	The 58th Annual Allerton Conference on Communication, Control, and Computing	Allerton, University of Illinois at Urbana- Champaign, USA (in person)	https://allerton.csl.illinois.edu/	July 8, 2021
October 4–6, 2021	IEEE Conference on Communications and Network Security	Virtual Conference	https://cns2021.ieee-cns.org/	June 17, 2021
October 17–21, 2021	IEEE Information Theory Workshop (ITW)	Kanazawa, Japan (virtual)	http://itw2021.org/	Passed
October 18–21, 2021	The 19th International Symposium on Modeling and Optimization in Mobile, Ad hoc, and Wireless Networks (WiOpt)	Philadelphia, PA, USA (in person)	http://www.wi-opt.org/cfp.html	Passed
December 6–14, 2021	The 35th Conference on Neural Information Processing Systems (NeurIPS)	Virtual Conference	https://nips.cc/	Passed
December 7–11, 2021	IEEE Global Communications Conference (GLOBECOM)	Madrid, Spain (hybrid)	https://globecom2021.ieee-globecom.org/	Passed
February 7–10, 2022	62nd Annual IEEE Symposium on Foundations of Computer Science (FOCS)	Boudler, Colorado, USA (in person)	https://focs2021.cs.colorado.edu/	June 3, 2021