IEEE
Information
Theory
Society

The 2021 IEEE International Symposium on Information Theory
Melbourne, Victoria, Australia

Awards Ceremony
July 2021

IEEE Medals & Technical Field Awards

2021 IEEE Medal of Honor

The IEEE Medal of Honor, established in 1917, is the highest IEEE award. It is presented when a candidate is identified as having made a particular contribution that forms a clearly exceptional addition to the science and technology of concern to IEEE.

Jacob Ziv

For fundamental contributions to information theory and data compression technology, and for distinguished research leadership.

2021 IEEE Richard E. Hamming Medal

Recognizes exceptional contributions to information sciences, systems, and technology, sponsored by Qualcomm.

Raymond W. Yeung

For fundamental contributions to information theory and pioneering network coding and its applications.

2021 IEEE Jack S. Kilby Signal Processing Medal

Recognizes outstanding achievements in signal processing, sponsored by The Kilby Medal Fund.

Emmanuel Candès

For groundbreaking contributions to compressed sensing.

2021 IEEE Leon K. Kirchmayer Graduate Teaching Award

Recognizes inspirational teaching of graduate students in the IEEE fields of interest, sponsored by the Leon K. Kirchmayer Memorial Fund.

Andrea Goldsmith

For educating, developing, guiding, and energizing generations of highly successful students and postdoctoral fellows.

2021 Eric E. Sumner Award

Recognizes outstanding contributions to communications technology, sponsored by Nokia Bell Labs.

En-hui Yang

For contributions to the theory and practice of source coding.

2021 Claude E. Shannon Award

Recognizes consistent and profound contributions to the field of information theory.

Alon Orlitsky received B.Sc. degrees in Mathematics and Electrical Engineering from Ben Gurion University in 1980 and 1981, and M.Sc. and Ph.D. degrees in Electrical Engineering from Stanford University in 1982 and 1986. From 1986 to 1996 he was with the Communications Analysis Research Department of Bell Laboratories. He spent the following year as a quantitative analyst at D.E. Shaw and Company, an investment firm in New York City. In 1997 he joined the University of California San Diego, where he is currently a professor of Electrical and Computer Engineering and of Computer Science and Engineering. His research concerns information theory, statistical modeling, and machine learning.

From 2011 to 2014 Alon directed UCSD's Center for Wireless Communications, and since 2006 he has directed the Information Theory and Applications Center. He was the president of the Information Theory Society in 2016. He has co-organized numerous programs on information theory, machine learning, and statistics, including the Information Theory and Applications Workshop that he started in 2006 and has helped organize since.

Alon is a recipient of the 1981 ITT International Fellowship and the 1992 IEEE W.R.G. Baker Paper Award, and co-recipient of the 2006 Information Theory Society Paper Award and the 2016 NIPS Paper Award. He co-authored two papers for which his students received student-paper awards: the 2003 Capocelli Prize and the 2010 ISIT Student Paper Award. He is a fellow of the IEEE, and holds the Qualcomm Chair for Information Theory and its Applications at UCSD.

2021 Aaron D. Wyner Distinguished Service Award

Recognizes an individual who has shown outstanding leadership in, and provided long-standing exceptional service to, the Information Theory community.

Gerhard Kramer is Senior Vice President for Research and Innovation at the Technical University of Munich (TUM). He joined TUM as Alexander von Humboldt Professor and Chair of Communications Engineering in 2010. He received the B.Sc. and M.Sc. degrees in electrical engineering from the University of Manitoba in 1991 and 1992, respectively, and the Dr. sc. techn. degree from ETH Zurich in 1998. From 1998 to 2000, he was with Endora Tech AG in Basel, Switzerland, from 2000 to 2008 he was with the Math Center at Bell Labs in Murray Hill, NJ, and from 2009-2010 he was with the University of Southern California (USC), Los Angeles, CA. His research interests are primarily in information theory and communications theory, with applications to wireless, copper, and optical fiber networks. Gerhard Kramer is an IEEE Fellow and served as the 2013 President of the IEEE Information Theory Society. He is a member of the Bavarian Academy of Sciences and Humanities since 2015.

2021 James L. Massey Research & Teaching Award for Young Scholars

Recognizes outstanding achievement in research and teaching by young scholars in the information theory community.

Changho Suh is an Associate Professor of Electrical Engineering at KAIST. He received the B.S. and M.S. degrees in Electrical Engineering from KAIST in 2000 and 2002 respectively, and the Ph.D. degree in EECS from UC Berkeley in 2011. From 2011 to 2012, he was a postdoctoral associate in MIT. From 2002 to 2006, he had been with Samsung. Prof. Suh is a recipient of numerous awards, including the 2021 James L. Massey Research & Teaching Award for Young Scholars from the IEEE Information Theory Society, the 2019 AFOSR Grant, the 2019 Google Education Grant, the 2018 IEIE/IEEE Joint Award, the 2015 IEIE Haedong Young Engineer Award, the 2013 IEEE Communications Society Stephen O. Rice Prize, the 2011 David J. Sakrison Memorial Prize (the best dissertation award in UC Berkeley EECS), the 2009 IEEE ISIT Best Student Paper Award, the 2020 LINKGENESIS Best Teacher Award (the campus-wide Grand Prize in Teaching), and the four Department Teaching Awards (2013, 2019, 2020, 2021). Dr. Suh is an IEEE Information Theory Society Distinguished Lecturer, the General Chair of the Inaugural IEEE East Asian School of Information Theory, and a Member of Young Korean Academy of Science and Technology. He is also an Associate Editor of Machine Learning for the IEEE Transactions on Information Theory, the Editor for IEEE Information Theory Newsletter, a Column Editor for IEEE BITS the Information Theory Magazine, an Area Chair of NeurIPS 2021 and a Senior Programm Committee of IJCAI 2019–2021.

2020 Information Theory Society Paper Award

Recognize exceptional publications in the field and to stimulate interest in, and encourage contributions to, fields of interest of the Society.

Emmanuel Abbe, Afonso S. Bandeira, Georgina Hall for "Exact Recovery in the Stochastic Block Model," *IEEE Transactions on Information Theory*, Volume 62, Issue 1, pp. 471-487, January 2016.

Emmanuel Abbe received his Ph.D. degree from the EECS Department at the Massachusetts Institute of Technology (MIT) in 2008, and his M.S. degree from the Department of Mathematics at the Ecole Polytechnique Fédérale de Lausanne in 2003. He was at Princeton University as an assistant professor from 2012-2016 and an associate professor from 2016, jointly in the Program for Applied and Computational Mathematics and the Department of Electrical Engineering, as well an associate faculty in the Department of Mathematics at Princeton University since 2016. He joined EPFL in 2018 as a Full Professor, jointly in the Mathematics Institute and the School of Computer and Communication Sciences, where he holds the Chair of Mathematical Data Science. He is the recipient of the Foundation Latsis International Prize, the Bell Labs Prize, the NSF CAREER Award, the von Neumann Fellowship from the Institute for Advanced Study, and a co-recipient of the Simons-NSF Mathematics of Deep Learning Collaborative Research Award.

Afonso S. Bandeira holds a Bachelor's and Master's degree from the University of Coimbra, Portugal. He was awarded a PhD in Applied and Computational Mathematics from Princeton University, under the supervision of Amit Singer. After spending a year at the Department of Mathematics at MIT, he joined the faculty at the Mathematics Department of the Courant Institute of

Mathematical Sciences and the Center for Data Science, both at the New York University. Since September 2019 he is a Professor of Mathematics at the ETH Zurich. Afonso's research interests are in the broadly defined are of Mathematics of Data Science. Recent recognitions include a Sloan Fellowship in 2018, the 2019 ISAAC prize for Young Scientists, the 2020 Stephen Smale Prize from the FoCM society, and the 2020 Information Theory Society Paper Award.

Georgina Hall is an Assistant Professor of Decision Sciences at INSEAD. Her research focuses on convex relaxations of NP-hard problems, particularly those that arise in polynomial optimization and combinatorial problems on graphs. Prior to joining INSEAD in 2019, she was a postdoctoral student at INRIA under the supervision of Laurent Massoulie. She completed her PhD in Operations Research and Financial Engineering in 2018 under the supervision of Amir Ali Ahmadi. She is the recipient of the 2018 INFORMS Optimization Society Young Researcher's Prize and the 2017 Annual Award for Excellence in Teaching of Operations Research from the IISE, among other awards.

Elchanan Mossel, Joe Neeman, Allan Sly for "Consistency thresholds for the planted bisection model," *Electronic Journal of Probability*, no. 21, pp 1-24, 2016.

Elchanan Mossel is a Professor of Mathematics at the Massachusetts Institute of Technology. His research spans a number of topics across probability, statistics, economics, computer science, and mathematical biology.

He is known for his work in discrete Fourier analysis and its applications to computational complexity and social choice theory and for his research of information flow in biological, economic, and inferential networks.

Mossel held a Sloan Fellowship. He is a fellow of the American Mathematical Society, a Simons Fellow and a Vannevar Bush Fellow.

Joe Neeman got interested in random graphs during his Ph.D. at UC Berkeley, supervised by Elchanan Mossel, and he continued to study them during his postdoc at UT Austin (with Sujay Sanghavi and Constantine Caramanis). After a 2-year stint as a Bonn Junior Fellow at the University of Bonn, Joe returned to UT Austin as an Assistant Professor. Besides random graphs, he is interested in isoperimetric inequalities, concentration inequalities, noise stability, and various other probabilistic inequalities with a geometric flavor.

Allan Sly received a B.Sc. and M.Phil. (2006) from the Australian National University and a Ph.D. from the University of California at Berkeley (2009). He was a postdoctoral fellow at Microsoft Research (2009–2011) and a member of the Department of Statistics at the University of California at Berkeley (2011–2016) before joining the faculty at Princeton University, where he is currently a professor in the Department of Mathematics.

2021 IEEE Communications Society & Information Theory Society Joint Paper Award

Recognizes the author(s) of outstanding papers appearing in any publication of the IEEE Communications Society or the IEEE Information Theory Society in the previous three calendar years.

Sung-En Chiu, Nancy Ronquillo, and Tara Javidi for "Active Learning and CSI Acquisition for mmWave Initial Alignment," *IEEE Journal on Selected Areas in Communications*, Vol.37, No. 11, pp. 2474 - 2489, November 2019.

Sung-En Chiu received the B.S. and M.S. degree in electrical engineering from National Chiao Tung University, Hsinchu, Taiwan, in 2008 and 2010. From 2011 to 2013, he served as a 3GPP RAN1 delegate for Industrial Technology Research Institute (ITRI), Hsinchu., Taiwan. He received his Ph.D. in electrical and computer engineering from the University of California, San Diego, in 2019. His research interests include sequential information processing, Bayesian analysis, compressive sensing, mmWave communication, large-scale MIMO beamforming. He is currently working as a system engineer at Samsung semiconductor in San Diego in mmWave radio frequency (RF) system design on the topics such as beamforming design, close-loop power control, RF impairment compensation, etc.

Nancy Ronquillo received the B.S. degree in aerospace engineering and the M.S. degree in electrical engineering from the University of California, San Diego in 2015, and 2018 respectively. She completed the Ph.D. degree in electrical engineering specializing in communications theory and systems at the University of California, San Diego in 2021. Her current research interests include using theoretical methods on information acquisition and processing for practical problems in areas such as spectrum sensing, millimeter wave communications, and radar systems. Nancy Ronquillo is a recipient of the

Alfred P. Sloan Foundation's Minority Ph.D. program fellowship, and the Science, Mathematics And Research for Transformation (SMART) Scholarship by the Department of Defense. She is also a Ronald E. McNair Postbaccalaureate Achievement Program scholar, and a National Action Council for Minorities in Engineering scholar.

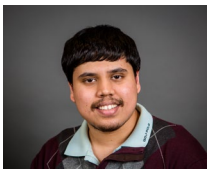
Tara Javidi received her BS in electrical engineering at Sharif University of Technology, Tehran, Iran. She received her MS degrees in electrical engineering (systems) and in applied mathematics (stochastic analysis) from the University of Michigan, Ann Arbor. She received her Ph.D. in electrical engineering and computer science from the University of Michigan, Ann Arbor, in 2002. From 2002 to 2004, Tara Javidi was an assistant professor at the Electrical Engineering Department, University of Washington, Seattle. In 2005, she joined the University of California, San Diego, where she is currently a professor of electrical and computer engineering.

Tara Javidi's research interests are in theory of active learning, information acquisition and inference, information theory with feedback, and stochastic control as well as their applications in autonomous cyber physical systems and wireless networks. At the University of California, San Diego, Tara Javidi is a founding co-director of the Center for Machine-Integrated Computing and Security and is the principal investigator of DetecDrone Project. She is also a founding faculty member of UCSD's Halicioglu Data Science Institute (HDSI). She is also a member of Board of Governors of the IEEE Information Theory Society.

2021 Thomas M. Cover Dissertation Award

Recognizes the author of an outstanding doctoral dissertation contributing to the mathematical foundations of any of the information sciences within the purview of the Society.

Anuran Makur for "Information Contraction and Decomposition."

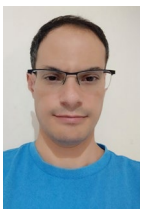


Anuran Makur received a B.S. degree with highest honors (summa cum laude) from the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley (UC Berkeley), CA, USA, in 2013, and the S.M. and Sc.D. degrees from the Department of Electrical Engineering and Computer Science at the Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, in 2015 and 2019, respectively. He is currently a postdoctoral researcher at the Laboratory for Information and Decision Systems at MIT. His research interests include theoretical statistics and machine learning, information theory, and other areas in applied probability. He was a recipient of the Arthur M. Hopkin Award from UC Berkeley in 2013, the Irwin Mark Jacobs and Joan Klein Jacobs Presidential Fellowship from MIT in 2013, the Ernst A. Guillemin Master's Thesis Award from MIT in 2015, and the Jin Au Kong Doctoral Thesis Award from MIT in 2020.

2020 Jack Keil Wolf ISIT Student Paper Award

Recognizes up to three outstanding papers at the ISIT for which a student is the principal author and the presenter. The award is based on the paper's technical contribution as well as the quality of its presentation.

Tomer Barg for "Binary Hypothesis Testing with Deterministic Finite-Memory Decision Rules," (co-authored with Or Ordentlich and Ofer Shayevitz).



Tomer Berg received his B.Sc. degree (summa cum laude) in 2010 in biomedical engineering in Ben Gurion University, his M.Sc. degree (magna cum laude) in 2019 in electrical engineering in Tel Aviv University, and is currently in his PhD studies also in electrical engineering in Tel Aviv University. His research focuses on problems in information theory, statistics, and communication.

Or Ordentlich is currently an Assistant Professor at the School of Computer Science and Engineering in the Hebrew University of Jerusalem

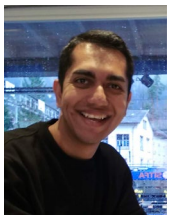
Ofer Shayevitz is currently an Associate Professor in the School of Electrical Engineering, Dept. of Systems, at Tel Aviv University

Payam Delgosha for "A Universal Low Complexity Compression Algorithm for Sparse Marked Graphs," (co-authored with Venkat Anantharam).

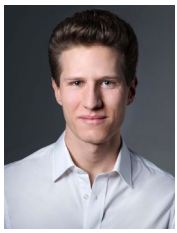
Payam Delgosha received the B.Sc. degree in electrical engineering and pure mathematics in 2012, and his M.Sc. degree in electrical engineering in 2014, both from the Sharif University of Technology, Tehran, Iran. He received the Ph.D. in Electrical Engineering and Computer Sciences (EECS) from the University of California at Berkeley in 2020. He is currently with the department of computer science at the University of Illinois, Urbana-Champagin. His research interests are broadly in the areas of applied probability, information theory, machine learning, and game theory.

Venkat Anantharam is on the faculty of the Department of Electrical Engineering and Computer Sciences at University of California, Berkeley.

Navneeth Ramakrishnan and Raban Iten
for "Quantum Blahut-Arimoto Algorithms," (co-authored with Volkher Scholz and Mario Berta).



Navneeth Ramakrishnan received his B.Sc. and M.Sc. degrees in physics from the National University of Singapore. He is currently a Ph.D. student at the Department of Computing at Imperial College London working in the field of quantum information theory.



Raban Iten studied Physics and Mathematics at ETH Zürich, followed by a PhD in the quantum information theory group. During his PhD, he worked on quantum algorithms, quantum circuit optimization and on using machine learning to discover physical concepts from experimental data of classical and quantum systems.

Volkher Scholz is currently a Postdoctoral Researcher in the Department of Physics, Ghent University.

Mario Berta is currently a Senior Research Scientist at the Amazon Web Services Center for Quantum Computing located at the California Institute of Technology.

2021 Padovani Lecturer

The Padovani Lecture is held annually at the North American School of Information Theory. The Lecturer is selected by the Membership Committee.

Muriel Médard

2021 Goldsmith Lecturer

The Goldsmith Lecture will be delivered by an early-career woman researcher at one of the ITSoc's Schools of Information Theory, held for the benefit of students and postdoctoral researchers. The Lecturer is selected by the Membership Committee.

Yuejie Chi

Recognition of School Organizers

The Information Theory Society recognizes the following individuals, who have been General Chair or Co-Chairs of Schools since the last ISIT:

2020 IEEE European School on Information Theory, Stuttgart, Germany

General Co-Chairs:
Stephan ten Brink
Christian Senger

2021 IEEE North American School of Information Theory, Vancouver, Canada

General Co-Chairs:
Lutz Lampe
Lele Wang

2021 Joint Telematics Group / IEEE Information Theory Society Summer School in Information Theory, Signal Processing, Telecommunication, and Networking, IIT Kanpur, India

General Chair:
Adrish Banerjee

2021 Chapter of the Year Award

The Chapter of the Year Award annually recognizes a chapter that provides their membership with outstanding programs and activities. The prize includes $1,000 to support local chapter activities.

Guangzhou Section Chapter

For educational programs, outreach activities, and the promotion of information-theory research.

2021 Distinguished Lecturers

The Information Theory Society recognizes the following Distinguished Lecturers:

Ning Cai *(2021-2022)*

Natasha Devroye *(2019-2021)*

Lara Dolecek *(2021-2022)*

Deniz Gündüz *(2020-2022)*

Syed Jafar *(2019-2021)*

Lalitha Sankar *(2020-2022)*

Yossef Steinberg *(2020-2022)*

Changho Suh *(2020-2022)*

Daniela Tuninetti *(2020-2022)*

Roy Yates *(2019-2021)*

Aylin Yener *(2019-2021)*

Recognition of Editor-in-Chief and Executive Editor

The Information Theory Society recognizes the exceptional service and leadership of the Editor-in-Chief and the Executive Editor of the IEEE Transactions on Information Theory, whose terms ended this year:

Igal Sason
Transactions Executive Editor (2018-2019)
Transactions Editor-in-Chief (2020-2021)

Erdal Arıkan
Transactions Executive Editor (2020-2021)

Recognition of Associate Editors

The Information Theory Society recognizes the contributions of the following individuals whose terms as Associate Editor of the IEEE Transactions on Information Theory have ended since the last ISIT:

Radu Balan
Detection and Estimation (August 2017 – August 2020)

Kamalika Chaudhuri
Statistical Learning (January 2018 – January 2021)

Max Henrique Machado Costa
Shannon Theory (May 2017 – April 2021)

Natasha Devroye
Communications (August 2017 – August 2020)

Bikash Dey
Coding Techniques (April 2018 – April 2021)

Anxiao (Andrew) Jiang
Coding Theory (August 2017 – August 2020)

Joerg Kliewer
Coding Techniques (August 2017 – August 2020)

Ioannis Kontoyiannis
At Large (October 2017 – September 2020)

Maxim Raginsky
Probability and Statistics (February 2018 – February 2021)

Vladimir Sidorenko
Coding Theory (March 2017 – March 2021)

Alexander Stolyar
Communication Networks (February 2019 – February 2021)

Shun Watanabe
Shannon Theory (August 2016 – July 2020)

Mark Wilde
Quantum Information Theory (May 2015 – April 2021)

Chaoping Xing
Coding Theory (December 2014 – November 2020)

Recognition of Guest Editors

The Information Theory Society recognizes the contributions of the following individuals for their contributions as Guest Editors of the IEEE Journal on Selected Areas in Information Theory and IEEE Transactions on Information Theory:

Richard Baraniuk, Alex Dimakis, Negar Kiyavash, Sewoong Oh, Rebecca Willett
"Deep Learning: Mathematical Foundations and Applications to Information Science" (JSAIT, May 2020)

Emina Soljanin, Andreas Winter
"Quantum Information Science" (JSAIT, August 2020)

Devavrat Shah, Guy Bresler, John Duchi, Po-Ling Loh, Yihong Wu, Christina Lee Yu
"Estimation and Inference" (JSAIT, November 2020)

H. Vincent Poor, Matthieu Bloch, Onur Günlü, Frédérique Oggier, Lalitha Sankar, Rafael F. Schaefer, Aylin Yener
"Privacy and Security of Information Systems" (JSAIT, March 2021)

Alexander Barg, Lara Dolecek, Ryan Gabrys, Gyula O. H. Katona, János Körner, Andrew McGregor, Olgica Milenkovic, Sihem Mesnager, Gilles Zémor
"From Deletion-Correction to Graph Reconstruction: In Memory of Vladimir I. Levenshtein" (T-IT, June 2021)

2021 IEEE Fellows

Stephan ten Brink, for contributions to iterative detection and decoding

Chan-Byoung Chae, for contributions to MIMO design and prototypes for emerging communication systems.

Dongning Guo, for contributions to multi-user detection and estimation theory.

Tara Javidi, for contributions to stochastic resource allocation and active hypothesis testing.

Francis Lau, for contributions to analysis of chaotic communications systems and low-density parity-check code design.

Sandeep Pradhan, for contributions to coding for distributed compression and structured coding.

Hyundong Shin, for contributions to the analysis and design of wireless communication and networking.

Erik Strom, for contributions to reliable low latency communications and synchronization of code-division systems.

Edward Tiedemann, for innovation and standardization of digital cellular communications.

Daniela Tuninetti, for contributions to theory of repetition protocols and wireless interference management.

Pascal Vontobel, for contributions to graphical models for channel coding.

Birsen Yazici, for contributions to synthetic aperture radar and passive imaging.

Recognition of Special Service

The Information Theory Society recognizes the exceptional service and leadership of the following individuals:

Elza Erkip
Second Vice President (2016)
First Vice President (2017)
President (2018)
Junior Past President (2019)
Senior Past President (2020)

Aaron B. Wagner
Treasurer (2018-2020)

Daniel J. Costello
External Nominations Committee Chair (2019-2020)

Stark Draper
Schools Subcommittee Chair (2018-2020)

Salim El Rouayheb
Newsletter Editor (2018-2020)

Christina Fragouli
Thomas M. Cover Dissertation Award Committee Chair (2019-2020)

Antonia Tulino
Fellows Evaluation Committee Chair (2019-2020)

Recognition of Service for the Board of Governors

The Information Theory Society recognizes the exceptional service and leadership of the following individuals:

H. Vincent Poor
Member of the Board of Governors (2015-2020)

Parastoo Sadeghi
Member of the Board of Governors (2019-2020)

Recognition of Conference Organizers

The Information Theory Society recognizes the following individuals, who have been General Co-Chairs or Program Committee Co-Chairs since and including the last ISIT:

2020 IEEE International Symposium on Information Theory, Los Angeles, USA

General Co-Chairs:

Salman Avestimehr
Giuseppe Caire
Babak Hassibi

Technical Program Committee Co-Chairs:

Young-Han Kim
Frederique Oggier
Gregory Wornell
Wei Yu

2020 IEEE Information Theory Workshop, Riva del Garda, Italy

General Co-Chairs:

Enrico Paolini
Marco Dalai

Technical Program Committee Co-Chairs:

Alon Orlitsky
Nicolò Cesa-Bianchi
Olgica Milenkovic