

Proposal of New Associate Editors for the IEEE Transactions on Information Theory

Igal Sason

Editor-in-Chief
IEEE T-IT

Board of Governors Meeting
June 21st, 2020

Proposed New Associate Editors

- 1 Claude Carlet – Sequences
- 2 Guang Gong – Sequences
- 3 Marco Lops – Detection and Estimation
- 4 David Mitchell – Coding Theory (emphasis on LDPC codes)
- 5 Changho Suh – Statistical Learning
- 6 Himanshu Tyagi – Shannon Theory
- 7 Eitan Yaakobi – Coding Theory (emphasis on coding for storage).

Claude Carlet

Biography: Claude Carlet is a former student of ENS Cachan and received the Ph.D. degree from the University of Paris 6, Paris, France, in 1990. He is Professor Emeritus in the Department of mathematics of the University of Paris 8, Saint-Denis, France and member of the Department of computer science of the University of Bergen, Norway. His research interests include Boolean functions, cryptology, sequences, and coding theory. He is the Editor in Chief of the journal “Cryptography and Communications - Discrete Structures, Boolean Functions and Sequences” (Springer) and is AE in the editorial boards of “Designs, Codes and Cryptography” (Springer), “Advances in Mathematics of Communications” (AIMS), “International Journal of Computer Mathematics” (Taylor & Francis) and the Journal of Algebraic Combinatorics (JACO, Springer). He published more than 200 papers, 40 of which in *IEEE Transactions on Information Theory*.

Web site: www.math.univ-paris13.fr/~carlet/english.html

Selected Publications:

1. C. Carlet. Handling vectorial functions by means of their graph indicators. To appear in *IEEE Transactions on Information Theory*, 2020.
2. L. Budaghyan, C. Carlet, T. Hellesest and N. Kaleyski. Changing Values in APN Functions. To appear in *IEEE Transactions on Information Theory*, 2020.
3. C. Carlet, S. Mesnager, C. Tang and Y. Qi. New characterization and parametrization of LCD Codes. *IEEE Transactions on Information Theory* 65 (1), pp. 39-49, 2019.
4. C. Carlet, S. Mesnager, C. Tang, Y. Qi and R. Pellikaan. Linear codes over \mathbb{F}_q are equivalent to LCD codes for $q > 3$. *IEEE Transactions on Information Theory* 64 (4) (Special Issue in honor of Solomon Golomb), pp. 3010-3017, 2018.
5. C. Carlet. Characterizations of the differential uniformity of vectorial functions by the Walsh transform. *IEEE Transactions on Information Theory*, Volume: 64 (9), pp. 6443-6453, 2018.
6. C. Carlet. Boolean and vectorial plateaued functions, and APN functions. *IEEE Transactions on Information Theory* 61 (11), pp. 6272-6289, 2015.
7. C. Carlet. Recursive lower bounds on the nonlinearity profile of Boolean functions and their applications. *IEEE Transactions on Information Theory* 54 (3), pp. 1262 - 1272, 2008.
8. C. Carlet and S. Mesnager. Improving the upper bounds on the covering radii of binary Reed-Muller codes. *IEEE Transactions on Information Theory* 53, pp. 162-173, 2007.
9. C. Carlet \mathbb{Z}_{2^k} -linear codes. *IEEE Transactions on Information Theory* 44 (4), pp. 1543-1547, 1998.
10. C. Carlet. Generalized Partial Spreads. *IEEE Transactions on Information Theory* 41 (5), pp. 1482-1487, 1995.

Guang Gong

Biography: Guang Gong received the B.S. degree in mathematics from Xichang Normal College in 1981, the M.S. degree in applied mathematics from Xidian University in 1985, and the Ph.D. degree in electrical engineering from the University of Electronic Science and Technology of China (UESTC) in 1990. She received a Post-Doctoral Fellowship from the Fondazione Ugo Bordoni, Rome, Italy, and spent the following year there. She worked with Dr. Solomon W. Golomb at the University of Southern California from 1996 to 1998 and joined the University of Waterloo, Canada, in 1998, as an Associate Professor at the Department of Electrical and Computer Engineering in 2000, a Full Professor in 2004, and University Research Chair in 2018. Her research interests are in the areas of sequences, cryptography, and computer and communication security, and focuses on the research topics on pseudorandom sequences, lightweight cryptography (LWC), Internet-of-Things security, blockchain privacy, and privacy preserving machine learning. She is a Fellow of the IEEE.

Website: <https://uwaterloo.ca/scholar/ggong>

Selected publications:

1. Z.L. Chang, G. Gong and Q. Wang. Cycle structures of a class of cascaded FSRs, *IEEE Transactions on Information Theory*, 2020.
2. N. Zidaric, M. Aagaard, and G. Gong, Hardware optimizations and analysis for the WG-16 cipher with tower field arithmetic, *IEEE Transactions on Computers*, vol. 64, No. 1, 2019.
3. Z.L. Wang and G. Gong, Discrete Fourier transform of Boolean functions over the complex field and its applications, *IEEE Transactions on Information Theory - Special Issue on Shift-Register Sequences, Codes and Cryptography in Memory of Solomon W. Golomb*, vol. 64, No. 4, pp. 3000-3009, 2018.
4. K. Mandal and G. Gong, Feedback Reconstruction and Implementations of Pseudorandom-Number Generators from Compositd De Bruijn Sequences, *IEEE Transactions on Computers*, Vol. 65, No. 9, pp. 2725 - 2738, 2016.
5. Z.J. Li, G. Gong, and Z.G. Qin, Secure and efficient LCMQ entity authentication protocol, *IEEE Transactions on Information Theory*, Vol. 59, No.6, pp. 4042-4054, June 2013.
6. Z.L. Wang and G. Gong, New sequences design from Weil representation with low two-dimensional correlation in both time and phase shifts, *IEEE Transactions on Information Theory*, vol. 57, No. 7, pp.4600 - 4611, July 2011.
7. G. Gong, S. Ronjom, T. Hellesteth, and H. Hu, Fast discrete Fourier spectra attacks on stream ciphers, *IEEE Transactions on Information Theory*, vol. 57, No. 8, pp. 5555-5565, Aug. 2011.
8. P. Charpin and G. Gong, Hyperbent functions, Kloosterman sums and Dickson polynomials, *IEEE Trans. on Information Theory*, Vol. 54, No. 9, pp. 4230-4238, Sept. 2008.
9. S.W. Golomb and G. Gong, Signal Design for Good Correlation - for Wireless Communication, Cryptography and Radar, Cambridge University Press, 2005.
10. G. Gong, Theory and applications of q -ary interleaved sequences, *IEEE Trans. on Information Theory*, vol. 41, No. 2, March 1995, pp. 400-411.

Marco Lops

Biography: Marco Lops received his "Laurea" (5 years) and Ph. D. degrees in Electronic and Computer Engineering from University "Federico II" of Naples, Italy. He joined the Dipartimento di Ingegneria Elettronica at "Federico II" as assistant professor (1989-1991), and then as associate professor (1991-2000). In 2000 he moved to University of Cassino as full professor, while in 2009 he was appointed full professor at ENSEEIHT (University of Toulouse, France). After his return in Italy, he joined in 2018 the Department of Electrical Engineering and Information Technologies at "Federico II", where he has been a full professor since. His research interests are in the field of detection, estimation and statistical signal processing, with an emphasis on communications and radar. He has served as an Associate Editor for IEEE Transactions on Information Theory, IEEE Transactions on Signal Processing and is now a Senior Area Editor for TSP. He is a Fellow of the IEEE.

Web site: <http://docenti.unina.it/marco.lops>

Selected Publications

12. C. D'Andrea, S. Buzzi, M. Lops, "Communications and Radar Coexistence in the Massive MIMO Regime: Uplink Analysis", *IEEE Transactions on Wireless Communications*, Vol. 19, No. 1, pp. 19-33, Jan. 2020.
11. L. Zheng, M. Lops, X. Wang, E. Grossi, "Joint Design of Overlaid Communication Systems and Pulsed Radars", *IEEE Transactions on Signal Processing*, pp. 139-154, Jan. 2018.
10. N. Garcia, M. Coulon, A. Haimovich, M. Lops, "Resource allocation in MIMO radar with multiple targets for non-coherent localization", *IEEE Transactions on Signal Processing*, pp. 2656 - 2666, May 2014.
9. E. Grossi, M. Lops, L. Venturino "A novel dynamic programming algorithm for track-before-detect in radar systems", *IEEE Transactions on Signal Processing*, pp. 2608-2619, May 2013.
8. E. Grossi, M. Lops, "Space-Time Code design for MIMO detection based on Kullback-Leibler divergence", *IEEE Transactions on Information Theory*, pp. 3989 - 4004, June 2012.
7. A. Aubry, M. Lops, A. M. Tulino, L. Venturino, "On MIMO Detection under non-Gaussian Scattering Targets", *IEEE Transactions on Information Theory*, pp. 5822 - 5838, November 2010.
6. D. Angelosante, E. Biglieri, M. Lops, "Multiuser Detection in dynamic environment - Part II: Joint User Identification and Parameter Estimation", *IEEE Transactions on Information Theory*, May 2009, pp. 2365-2374.
5. E. Grossi, M. Lops, "Sequential Detection of Markov Targets With Trajectory Estimation," *IEEE Transactions on Information Theory*, vol. 54, pp. 4144-4154, 2008.
4. E. Biglieri, M. Lops, "Multiuser detection in a dynamic environment - Part I: User identification and data detection," *IEEE Transactions on Information Theory*, pp. 3158-3170, May 2007.
3. A. De Maio, M. Lops, "Design Principles of MIMO Radar Detectors", *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 43, N. 3, pp. 886-898, 2007.
2. L. Venturino, X. Wang, M. Lops, "Multiuser detection for cooperative networks and performance analysis," *IEEE Transactions on Signal Processing*, vol. 54, pp. 3315-3329, 2006.
1. E. Conte, M. Lops, G. Ricci, "Asymptotically optimum radar detection in compound-Gaussian clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 31, pp. 617-625, 1995.

David G. M. Mitchell

Biography: David G. M. Mitchell received the Ph.D. degree in Electrical Engineering from the University of Edinburgh, United Kingdom, in 2009. He is currently an Assistant Professor in the Klipsch School of Electrical and Computer Engineering at the New Mexico State University, USA. He previously held Visiting Assistant Professor and Post-Doctoral Research Associate positions in the Department of Electrical Engineering at the University of Notre Dame, USA. He is a Senior Member of the IEEE and his research interests are in the area of digital communications, with emphasis on error control coding and information theory. Dr. Mitchell was named as an exemplary reviewer (top 2%) for the *IEEE Transactions on Communications* in 2018.

Web site: <http://web.nmsu.edu/~dgmm>

Selected Publications:

1. H. Hatami, D. G. M. Mitchell, D. J. Costello, Jr., and T. Fuja, "Performance Bounds and Estimates for Quantized LDPC Decoders," *IEEE Transactions on Communications*, vol. 68, no. 2, pp. 683-696, Feb. 2020.
2. D. Truhachev, D. G. M. Mitchell, M. Lentmaier, D. J. Costello Jr., and A. Karami, "Code Design Based on Connecting Spatially Coupled Chains," *IEEE Transactions on Information Theory*, vol. 65, no. 9, pp. 5604-5617, Sept. 2019.
3. A. Golmohammadi, D. G. M. Mitchell, J. Klierwer, and Daniel J. Costello, Jr., "Encoding of Spatially Coupled LDGM Codes for Lossy Source Compression," *IEEE Transactions on Communications*, vol. 66, no. 11, pp. 5691-5703, Nov. 2018.
4. P. M. Olmos, D. G. M. Mitchell, D. Truhachev, and D. J. Costello, Jr., "Continuous Transmission of Spatially-Coupled LDPC Code Chains," *IEEE Transactions on Communications*, vol. 65, no. 12, pp. 5097-5109, Dec. 2017.
5. L. Wei, D. G. M. Mitchell, T. E. Fuja, and D. J. Costello, Jr., "Design of Spatially Coupled LDPC Codes Over GF(q) for Windowed Decoding," *IEEE Transactions on Information Theory*, vol. 62, no. 9, pp. 4781-4800, Sept. 2016.
6. D. G. M. Mitchell, M. Lentmaier, A. E. Pusane, and D. J. Costello, Jr., "Randomly Punctured LDPC Codes," *IEEE Journal on Selected Areas in Communications*, vol. 34, no. 2, pp. 408-421, Feb. 2016.
7. D. G. M. Mitchell, M. Lentmaier, and D. J. Costello, Jr., "Spatially Coupled LDPC Codes Constructed from Protographs," *IEEE Transactions on Information Theory*, vol. 61, no. 9, pp. 4866-4889, Sep. 2015.
8. D. G. M. Mitchell, R. Smarandache, and D. J. Costello, Jr., "Quasi-Cyclic LDPC Codes Based on Pre-lifted Protographs," *IEEE Transactions on Information Theory*, vol. 60, no. 10, pp. 5856-5874, Oct. 2014.
9. H. Zhou, D. G. M. Mitchell, N. Goertz, and D. J. Costello, Jr., "Robust Rate-Compatible Punctured LDPC Convolutional Codes," *IEEE Transactions on Communications*, vol. 61, no. 11, pp. 4428-4439, Nov. 2013.
10. D. G. M. Mitchell, A. E. Pusane, and D. J. Costello, Jr., "Minimum Distance and Trapping Set Analysis of LDPC Convolutional Codes," *IEEE Transactions on Information Theory*, vol. 59, no. 1, pp. 254-281, Jan. 2013.

Changho Suh

Biography: Changho Suh is an Associate Professor in the School of Electrical Engineering at Korea Advanced Institute of Science and Technology (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 Electrical Engineering and Computer Sciences from UC Berkeley in 2011. From 2011 to 2012, he was a postdoctoral associate at the Research Laboratory of Electronics in MIT. From 2002 to 2006, he had been with the Telecommunication R&D Center, Samsung Electronics.

Prof. Suh received the 2018 IEIE/IEEE Joint Award, the 2015 IEIE Haedong Young Engineer Award, a 2015 Bell Labs Prize finalist, the 2013 IEEE Communications Society Stephen O. Rice Prize, the 2011 David J. Sakrison Memorial Prize, and the 2009 IEEE ISIT Best Student Paper Award. Dr. Suh is a Distinguished Lecturer for the IEEE Information Theory Society (2020–21) and a Member of Young Korean Academy of Science and Technology, and received the Google Education Grant and the two Department Teaching Awards in 2012 and 2019. He is currently the Guest Editor for the Special Issue of Entropy Journal, and has served as a Senior Program Committee and Technical Program Committee member in many flagship conferences: IEEE ISIT 2014–2020, NeurIPS 2017–2020, ICML 2017–2020, ICLR 2019–2020, IJCAI 2019–2020, AISTATS 2016–2018. He is also the General Chair and a tutorial speaker of the Inaugural East Asian School of Information Theory 2021.

Website: [http : //csuh.kaist.ac.kr](http://csuh.kaist.ac.kr)

Selected publications:

1. Y. Roh, K. Lee, S. Whang and C. Suh, “FR-Train: A mutual information-based approach to fair and robust training,” *International Conference on Machine Learning (ICML)*, Vienna, Austria, July 2020.
2. K. Ahn, K. Lee and C. Suh, “Community recovery in hypergraphs,” *IEEE Transactions on Information Theory*, vol. 65, no. 10, pp. 6561–6579, Oct. 2019.
3. K. Ahn, K. Lee, H. Cha and C. Suh, “Binary rating estimation with graph side information,” *Neural Information Processing Systems (NeurIPS)*, Montréal, Canada, Dec. 2018.
4. C. Suh, J. Cho and D. Tse, “Two-way interference channel capacity: How to have the cake and eat it too,” *IEEE Transactions on Information Theory*, vol. 64, no. 6, pp. 4259–4281, June 2018.
5. C. Suh, V. Y. F. Tan and R. Zhao, “Adversarial top- K ranking,” *IEEE Transactions on Information Theory*, vol. 63, no. 4, pp. 2201–2225, Apr. 2017.
6. Y. Chen, G. Kamath, C. Suh and D. Tse, “Community recovery in graphs with locality,” *International Conference on Machine Learning (ICML)*, New York, USA, June 2016.
7. Y. Chen and C. Suh, “Spectral MLE: Top- K rank aggregation from pairwise comparisons,” *International Conference on Machine Learning (ICML)*, Lille, France, July 2015 (**Bell Labs Prize finalist**).
8. C. Suh, M. Ho and D. Tse, “Downlink interference alignment,” *IEEE Transactions on Communications*, vol. 59, no. 9, pp. 2616–2626, Sep. 2011 (**IEEE Communications Society Stephen O. Rice Prize** in 2013).
9. C. Suh and D. Tse, “Feedback capacity of the Gaussian interference channel to within 2 bits,” *IEEE Transactions on Information Theory*, vol. 57, no. 5, pp. 2667–2685, May 2011 (**ISIT Best Student Paper Award**).
10. C. Suh and K. Ramchandran, “Exact-repair MDS code construction using interference alignment,” *IEEE Transactions on Information Theory*, vol. 57, no. 3, pp. 1425–1442, Mar. 2011 (**ISIT Best Student Paper Award finalist**).

HIMANSHU TYAGI

Biography: Himanshu Tyagi received the Bachelor of Technology degree in Electrical Engineering and Master of Technology degree in Information and Communication Technology, both from the Indian Institute of Technology, Delhi, in 2007, and a PhD degree from the University of Maryland, College Park, in 2013. He was a postdoctoral researcher at the Information Theory and its Applications (ITA) centre from 2013 to 2014. He joined the Department of Electrical Communication Engineering at the Indian Institute of Science (IISc), Bangalore, as a faculty member in January 2015. At IISc, he is a member of the Analysis and Probability Research Group and a participating faculty at the Robert Bosch Center for Cyberphysical Systems. His research interests broadly lie in information theory and its application in cryptography, statistics and computer science. Also, he is interested in communication and automation for city-scale systems.

Website: <http://ece.iisc.ac.in/~htyagi>

SELECTED PUBLICATIONS

1. H. Tyagi and S. Watanabe, "Strong converse using change of measure arguments," *IEEE Transactions on Information Theory*, vol 66, no 2, pp 689-703, February 2020.
 2. J. Acharya, C. Canonne, and H. Tyagi, "Inference under Local Constraints: Lower Bounds from Chi-Square Contractions." *Conference on Learning Theory (COLT) 2019*
 3. J. Acharya, C. Canonne, and H. Tyagi, "Communication Constrained Inference and the Role of Shared Randomness." *International Conference on Machine Learning (ICML) 2019*.
 4. P. Mayekar, P. Parag, and H. Tyagi, "Optimal Lossless Source Codes for Timely Updates," *IEEE International Symposium on Information Theory (ISIT)*, 2018.
 5. H. Tyagi and S. Watanabe, "Universal Multiparty Data Exchange and Secret Key Agreement," *IEEE Transactions on Information Theory*, vol. 63, no. 7, pp. 4057-4074, July 2017.
 6. J. Acharya, A. Orlitsky, A. T. Suresh, and H. Tyagi, "Estimating Renyi Entropy of Discrete Distributions," *IEEE Transactions on Information Theory*, vol. 63, no. 1, pp. 38-54, January 2017.
 7. P. Narayan and H. Tyagi, "Multiterminal Secrecy and Public Discussion," *Foundations and Trends in Communications and Information Theory*, vol. 13, no. 2-3, pp 129-275, 2016.
 8. H. Tyagi and S. Watanabe, "Converses for Secret Key Agreement and Secure Computing," *IEEE Transactions on Information Theory*, vol. 61, no. 9, pp. 4809-4827, September 2015.
 9. H. Tyagi, "Common Information and Secret Key Capacity," *IEEE Transactions on Information Theory*, vol. 59, no. 9, 5627-5640, September 2013.
 10. H. Tyagi, P. Narayan, and P. Gupta, "When is a Function Securely Computable?," *IEEE Transactions on Information Theory*, vol. 57, no. 10, pp. 6337-6350, Oct. 2011.
-

Eitan Yaakobi

Biography: Eitan Yaakobi (S'07–M'12–SM'17) is an Associate Professor at the Computer Science Department at the Technion — Israel Institute of Technology. He received the B.A. degrees in computer science and mathematics, and the M.Sc. degree in computer science from the Technion — Israel Institute of Technology, Haifa, Israel, in 2005 and 2007, respectively, and the Ph.D. degree in electrical engineering from the University of California, San Diego, in 2011. Between 2011–2013, he was a postdoctoral researcher in the department of Electrical Engineering at the California Institute of Technology and at the Center for Memory and Recording Research at the University of California, San Diego. His research interests include information and coding theory with applications to non-volatile memories, associative memories, DNA storage, data storage and retrieval, and private information retrieval. He received the Marconi Society Young Scholar in 2009 and the Intel Ph.D. Fellowship in 2010–2011.

Homepage: <http://yaakobi.net.technion.ac.il/>

Selected Publications

- [1] T. Etzion and **E. Yaakobi**, *Error-Correction of Multidimensional Bursts*, *IEEE Trans. Inform. Theory*, 55 (2009), 961–976.
- [2] **E. Yaakobi**, S. Kayser, P.H. Siegel, A. Vardy, and J.K. Wolf, *Codes for Write-Once Memories*, *IEEE Trans. Inform. Theory*, 58 (2012), 5985–5999.
- [3] **E. Yaakobi** and A. Shpilka, *High Sum-Rate Three-Write and Non-Binary WOM Codes*, *IEEE Trans. Inform. Theory*, 60 (2014), 7006–7015.
- [4] R. Gabrys, **E. Yaakobi**, and L. Dolecek, *Correcting Grain-Errors in Magnetic Media*, *IEEE Trans. Inform. Theory*, 61 (2015), 2256–2272.
- [5] A. Fazeli, A. Vardy, and **E. Yaakobi**, *Generalized Sphere Packing Bound*, *IEEE Trans. Inform. Theory*, 61 (2015), 2313–2334.
- [6] C. Schoeny, A. Wachter-Zeh, R. Gabrys, and **E. Yaakobi**, *Codes Correcting a Burst of Deletions or Insertions*, *IEEE Trans. Inform. Theory*, 63 (2017), 1971–1985.
- [7] H. Asi and **E. Yaakobi**, *Nearly Optimal Constructions of PIR and Batch Codes*, *IEEE Trans. Inform. Theory*, 65 (2019), 947–964.
- [8] **E. Yaakobi** and J. Bruck, *On the Uncertainty of Information Retrieval in Associative Memories*, *IEEE Trans. Inform. Theory*, 65 (2019), 2155–2165.
- [9] R. Gabrys, **E. Yaakobi**, M. Blaum, and P.H. Siegel, *Constructions of Partial MDS Codes over Small Fields*, *IEEE Trans. Inform. Theory*, 65 (2019), 3692–3701.
- [10] A. Lenz, P.H. Siegel, A. Wachter-Zeh, and **E. Yaakobi**, *Coding over Sets for DNA Storage*, *IEEE Trans. Inform. Theory*, 66 (2020), 2331–2351.

Motions

- 1 Approve Claude Carlet – Sequences
- 2 Approve Guang Gong – Sequences
- 3 Approve Marco Lops – Detection and Estimation
- 4 Approve David Mitchell – Coding Theory
- 5 Approve Changho Suh – Statistical Learning
- 6 Approve Himanshu Tyagi – Shannon Theory
- 7 Approve Eitan Yaakobi – Coding Theory.