

Editorial

Jaideep Vaidya 



It gives me great pleasure to report on the status of *IEEE TDSC* at the end of my first year as Editor-in-Chief of the journal. 2018 was very successful for *TDSC* in terms of the quality and quantity of papers published as well as the impact of the work published. As of November 2018, a total of 492 new papers have been submitted to *TDSC*, as compared to 486 papers submitted in all of 2017, which shows an upward trend in submissions. Furthermore, to accommodate the growth in submissions as well as to ensure a timely publication of the accepted papers, in 2018 the page budget of *TDSC* was increased from 700 to 1100. It is also very exciting to report that as per the 2017 Thomson Reuters Journal Citation Report, the impact factor of *TDSC* has increased with respect to the previous year and is now at 4.41.

To accommodate the growth in submissions as well as to provide a broader coverage of research expertise, the editorial board is being further expanded, with special consideration to geographical distribution. A specific focus in the recruitment of new editors has been to expand the number of editors in the areas of dependability, privacy, and cyber physical systems. Such efforts will also continue during 2019. I would like to thank the retiring editorial board members for their service to *TDSC* and am very pleased to report that the following new editors joined the editorial board of *TDSC* in 2018: Saurabh Bagchi (US), Gilles Barthe (Spain), Mauro Conti (Italy), Sajal Das (US), Manik Lal Das (India), Elias P. Duarte (Brazil), Sara Foresti (Italy), Vinod Ganapathy (India), Farinaz Koushanfar (US), Jin Li (China), Wenjing Lou (US), Fernando Pedone (Switzerland), Basit Shafiq (Pakistan), Shamik Sural (India), Anand Tripathi (US), Marco Vieira (Portugal), Jianying Zhou (Singapore). Please join me in welcoming these new editors to *TDSC*.

The editorial board is complemented by Associate Editor in Chief, Dr. Lorenzo Strigini (UK), who closely works with the Editor in Chief in identifying new editorial board members and topics for special issues and shepherding these special issues. Since there was a significantly long pipeline of accepted articles in press and three special issues that were published in 2018, *TDSC* did not approve of any additional special issues for 2019, though this will change in the upcoming year. Furthermore, a new track focusing on the science of security and dependability will start soliciting papers in 2019.

The review process has also been a focus of attention. In 2018, the average time in months from submission to first decision for accepted papers has been around 4 months, though a few outliers have taken significantly longer time. The goal for 2019 is to reduce the time for these outliers and to consistently handle papers in a shorter time frame. The increase in the editorial board size will help towards this goal.

Clearly the success of *IEEE TDSC* depends firstly on the quality of the submissions. I would like to take this opportunity to thank all the authors who have submitted their work to the journal. I hope that you will continue to submit your best work to *IEEE TDSC*. I would like also to thank the editors and reviewers for their dedication in ensuring a timely and high quality review process. Last but not least, I would like to thank the *IEEE CS* staff, and especially our editorial assistant Leigh Ann Testa, for the continuous support in the journal operations.

Enjoy the forthcoming issues of *IEEE TDSC*!!

Jaideep Vaidya
Editor-in-Chief



Saurabh Bagchi is a Professor in the School of Electrical and Computer Engineering and the Department of Computer Science at Purdue University in West Lafayette, Indiana. He is the founding Director of a university-wide resiliency center at Purdue called CRISP (2017-present). He is the recipient of the Alexander von Humboldt Research Award (2018), the Adobe Faculty Award (2017), the AT&T Labs VURI Award (2016), the Google Faculty Award (2015), and the IBM Faculty Award (2014). He serves on the IEEE Computer Society Board of Governors for the 2017-19 term. Saurabh's research interest is in distributed systems and dependable computing. He is proudest of the 20 PhD students who have graduated from his research group and who are in various stages of building wonderful careers in industry or academia. In his group, he and his students have far too much fun building and breaking real systems. Saurabh received his MS and PhD degrees from the University of Illinois at Urbana-Champaign and his BS degree from the Indian Institute of Technology Kharagpur, all in Computer Science.

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Elias P. Duarte Jr. is a Full Professor at Federal University of Parana, Curitiba, Brazil, where he is the leader of the Computer Networks and Distributed Systems Lab (LaRSis). His research interests include Computer Networks and Distributed Systems, their Dependability, Management, and Algorithms. He has published nearly 200 peer-reviewed papers and has supervised more than 120 students both on the graduate and undergraduate levels. Prof. Duarte is currently an Associate Editor of the IEEE Transactions on Dependable and Secure Computing, and has served as chair of more than 20 conferences and workshops in his fields of interest. He received a Ph.D. degree in Computer Science from Tokyo Institute of Technology, Japan, 1997, M.Sc. degree in Telecommunications from the Polytechnical University of Madrid, Spain, 1991, and both BSc and MSc degrees in Computer Science from Federal University of Minas Gerais, Brazil, 1987 and 1991, respectively. He chaired the Special Interest Group on Fault Tolerant Computing of the Brazilian Computing Society (2005-2007); the Graduate Program in Computer Science of UFPR (2006-2008); and the Brazilian National Laboratory on Computer Networks (2012-2016). He is a member of the Brazilian Computing Society and a Senior Member of the IEEE.



Fernando Pedone is a full professor at the Faculty of Informatics at the University of Lugano (USI), Switzerland, and one of the faculty's "founding members". He received the Ph.D. degree from Ecole Polytechnique Federale de Lausanne (EPFL) in 1999 and has been previously affiliated with Cornell University, USA, as a visiting professor, and Hewlett-Packard Laboratories (HP Labs), USA, as a researcher. Fernando Pedone's research interests include the theory and practice of dependable distributed systems and dependable data management systems. Fernando Pedone has authored several scientific papers and patents and has chaired numerous program committees, including DSN 2019, OPODIS 2016, SRDS 2011, and the Monte Verita seminar "A 30-year perspective on replication", which resulted in the book "Replication: theory and practice".



Marco Vieira is a Full Professor at the University of Coimbra, Portugal. His current research interests include dependability and security assessment and benchmarking, fault injection and vulnerability & attack injection, robustness and security testing, and online failure prediction, subjects on which he has authored or co-authored more than 170 papers in refereed conferences and journals. He has coordinated several research projects, both at the national and European level. Marco Vieira has served as PC-chair of the major conferences in the dependability area and acted as referee for many international conferences and journals.



Shamik Sural is a full professor in the Department of Computer Science and Engineering at IIT Kharagpur, India. Prior to joining the institute in 2002, Shamik worked in the software industry for more than ten years, where he designed and developed information systems using various technologies – both frontend integrated development environments as well as backend databases. Shamik has published more than 200 research papers in reputed international journals and conferences in the areas of computer security, data science and multimedia systems. Specifically, he has explored the problems of multimedia data modeling, security analysis for Role based Access Control (RBAC) and its variants, role mining, organizational resource optimization in the presence of various access control systems, Attribute based Access Control (ABAC), inter-cloud policy mining under ABAC and developing ABAC as a service. Shamik is a recipient of Alexander von Humboldt Fellowship for Experienced Researchers. He is a senior member of IEEE and has served as the Chairman of the IEEE Kharagpur Section in 2006.



Mauro Conti is Full Professor at the University of Padua, Italy, and Affiliate Professor at the University of Washington, Seattle, USA. He obtained his Ph.D. from Sapienza University of Rome, Italy, in 2009. After his Ph.D., he was a Post-Doc Researcher at Vrije Universiteit Amsterdam, The Netherlands. In 2011 he joined as Assistant Professor the University of Padua, where he became Associate Professor in 2015, and Full Professor in 2018. He has been Visiting Researcher at GMU (2008, 2016), UCLA (2010), UCI (2012, 2013, 2014, 2017), TU Darmstadt (2013), UF (2015), and FIU (2015, 2016, 2018). He has been awarded with a Marie Curie Fellowship (2012) by the European Commission, and with a Fellowship by the German DAAD (2013). His research is also funded by companies, including Cisco, Intel, and Huawei. His main research interest is in the area of security and privacy. In this area, he published more than 250 papers in topmost international peer-reviewed journals and conference. He is Area Editor-in-Chief for IEEE Communications Surveys & Tutorials, and Associate Editor for several journals, including IEEE Communications Surveys & Tutorials, IEEE Transactions on Information Forensics and Security, IEEE Transactions on Dependable and Secure Computing, and IEEE Transactions on Network and Service Management. He was Program Chair for TRUST 2015, ICISS 2016, WiSec 2017, and General Chair for SecureComm 2012 and ACM SACMAT 2013. He is Senior Member of the IEEE.



Sajal K. Das is a professor of Computer Science and the Daniel St. Clair Endowed Chair at the Missouri University of Science and Technology, USA. His research interests include cyber-physical security, wireless sensor networks, mobile and pervasive computing, crowdsensing, cyber-physical systems and IoTs, smart environments (smart city, smart grid and smart health care), cloud computing, and social networks, applied graph theory and game theory. He has published extensively in these areas with over 700 papers in high quality journals and refereed conference proceedings. Dr. Das holds 5 US patents and coauthored 4 books. His h-index is 83 with more than 28,000 citations according to Google Scholar. He is a recipient of 10 Best Paper Awards at prestigious conferences including ACM MobiCom and IEEE PerCom, and numerous awards for teaching, mentoring and research including the IEEE Computer Society's Technical Achievement Award for pioneering contributions to sensor networks and mobile computing. He serves as the founding Editor-in-Chief of Elsevier's Pervasive and Mobile Computing Journal, and as Associate Editor of several journals including IEEE Transactions on Dependable and Secure Computing, IEEE Transactions on Mobile Computing, and ACM Transactions on Sensor Networks. Dr. Das is an IEEE Fellow.



Manik Lal Das is Professor of Computer Science at Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, India. His research works broadly cover all areas of Cyber Security and IT security management. Dr. Das received his Ph.D. degree from Indian Institute of Technology, Bombay and M.Tech. degree from Indian School of Mines, Dhanbad, India. He is a senior member of the IEEE and life member of Cryptology Research Society of India.



Anand Tripathi received the BTech degree in Electrical Engineering from the Indian Institute of Technology, Bombay, in 1972 and the MS and PhD degrees in Electrical Engineering from the University of Texas at Austin, in 1978 and 1980, respectively. His research interests are in distributed systems, fault-tolerant computing, system security, and pervasive computing. He is a Professor of Computer Science at the University of Minnesota, Minneapolis. He worked as a Scientific Officer at Bhabha Atomic Research Center, India, during 1973-75. During 1981-84 he worked as a Senior Principal Research Scientist at Honeywell Computer Science Center, Minneapolis. He joined the University of Minnesota in 1984. During 1995-97, he served as a Program Director in the Division of Computer and Communications Research at the National Science Foundation, Arlington, Virginia. He is a Fellow of IEEE and a member of the ACM. He served as an at-large member of the IEEE Computer Society Publications Board (2001-2005). He has served on the editorial boards of IEEE Transactions on Computers, IEEE Distributed Systems Online, Elsevier Journal on Pervasive and Mobile Computing, and IEEE Pervasive Computing. He was the Program Chair for the IEEE Symposium on Reliable Distributed Systems (SRDS) in 2001 and the Second IEEE International Conference on Pervasive Computing and Communications (PerCom) in 2004. He was the Program Chair of the International Conference on Parallel Processing (ICPP) in 2014. He was one of the organizers of two ECOOP Workshops on exception handling held in 2000 and 2003, and co-editor for two Springer LNCS volumes on exception handling, published in 2002 and 2006.



Sara Foresti is an associate professor at the Computer Science Department, Università degli Studi di Milano, Italy. Her research interests are on data security and privacy, in particular in emerging scenarios. She has published more than 100 contributions as papers in international conferences and journals, and chapters in international books. She has authored the book "Preserving Privacy in Data Outsourcing," Springer, 2011. She has been visiting researcher at George Mason University, VA (USA). She is chair of the IEEE Computer Society Italy Chapter and vice-chair of the IFIP WG11.3 on Data and Application Security and Privacy. She has served as General Chair and as Program Chair of several international conferences/workshops. She is a member of the editorial board of: IEEE Transactions on Dependable and Secure Computing, IEEE Systems Journal, Computers & Security (Elsevier), International Journal of Information Security (Springer), Security and Privacy (Wiley), and Annals of Telecommunications (Springer).



Wenjing Lou is the W. C. English Professor of Computer Science at Virginia Tech and a Fellow of the IEEE. She holds a Ph.D. in Electrical and Computer Engineering from the University of Florida. Her research interests cover many topics in the cybersecurity field, with her current research interests focusing on privacy protection in networked information systems and cross-layer security enhancement in the Internet of Things (IoT) systems.



Basit Shafiq is an Associate Professor in the Department of Computer Science at Lahore University of Management Sciences (LUMS). Prior to joining LUMS, he was a Research Assistant Professor at the Center for Information Management, Integration and Connectivity (CIMIC), Rutgers University. He received B.S. degree in Electronic Engineering from GIK Institute of Engineering Sciences and Technology, Pakistan, M.S. and Ph.D. degrees in Electrical and Computer Engineering from Purdue University, USA. His general area of research is in services computing, distributed systems, security, and privacy. He has published over 60 technical papers in peer-reviewed journals and conference proceedings. Dr. Shafiq is a senior member of the IEEE. His research has been sponsored by the Higher Education Commission (HEC) Pakistan, Ignite - National Technology Fund, Pakistan, United States National Science Foundation, and SAP Research Labs.



Gilles Barthe is a research professor at the IMDEA Software Institute since April 2008. His research interests include programming languages and program verification, software and system security, cryptography, formal methods and foundations of mathematics and computer science. His recent research develops programming language techniques and verification methods for security, with a focus on cryptographic implementations and differentially private computations. Gilles received a Ph.D. in Mathematics from the University of Manchester, UK, in 1993, and an Habilitation à diriger les recherches in Computer Science from the University of Nice, France, in 2004.



Vinod Ganapathy is an Associate Professor in the Department of Computer Science and Automation at the Indian Institute of Science (IISc). Prior to joining IISc, he was a tenured faculty member in the Department of Computer Science at Rutgers University from 2007 to 2017. He earned a Ph.D. in Computer Science from the University of Wisconsin-Madison in 2007 and a B.Tech. in Computer Science & Engineering from IIT Bombay in 2001. The primary focus of his research is computer security. At IISc, he directs the Computer Systems Security Laboratory. The lab seeks to build practical computer systems with sound security guarantees. Vinod's research projects have considered security issues in a broad spectrum of computer systems, from cloud platforms through Web browsers to mobile devices. He has wide-ranging interests, and his projects usually draw on ideas and methods developed in a variety of areas, such as applied cryptography, program analysis, formal methods, machine intelligence, and hardware architecture.



Farinaz Koushanfar is a professor and Henry Booker Faculty Scholar in the Electrical and Computer Engineering (ECE) department at University of California San Diego (UCSD), where she directs the Adaptive Computing and Embedded Systems (ACES) Lab. She is the co-founder and co-director of the upcoming UCSD Center for Machine-Integrated Computing & Security (MICS) to be announced in fall 2017. Before joining UCSD, she was a professor in the ECE department at William Marsh Rice University which she joined as an assistant professor 9 years earlier. Prof. Koushanfar received her Ph.D. in Electrical Engineering and Computer Science as well as her M.A. in Statistics from UC Berkeley in December 2005. Her research addresses several aspects of efficient computing and embedded systems, with a focus on hardware and system security, real-time/energy-efficient big data analytics under resource constraints, design automation and synthesis for emerging applications, as well as practical privacy-preserving computing. Professor Koushanfar serves as an associate partner of the Intel Collaborative Research Institute for Secure Computing to aid developing solutions for the next generation of embedded secure devices. Dr. Koushanfar is a fellow of the Kavli Foundation Frontiers of the National Academy of Engineering. She has

received a number of awards and honors for her research, mentorship, teaching, and outreach activities including the Presidential Early Career Award for Scientists and Engineers (PECASE) from President Obama, the ACM SIGDA Outstanding New Faculty Award, Cisco IoT Security Grand Challenge Award, MIT Technology Review TR-35 2008 (World's top 35 innovators under 35), as well as Young Faculty/CAREER Awards from NSF, DARPA, ONR and ARO.



Jianying Zhou is a full professor at Singapore University of Technology and Design (SUTD), and Associate Center Director for iTrust. He received PhD in Information Security from Royal Holloway, University of London. His research interests are in applied cryptography and network security, cyber-physical system security, mobile and wireless security. He has published 200+ referred papers at international conferences and journals with 8000+ citations, and received ESORICS'15 best paper award. He is a co-founder & steering committee co-chair of ACNS. He is also steering committee chair of ACM AsiaCCS and steering committee member of Asiacypt. He has served in many international cyber security conference committees (including ACM CCS & AsiaCCS, IEEE CSF, ESORICS, RAID, ACNS, Asiacypt, FC, PKC) as general chair, program chair, and PC member. He has also been in the editorial board of top cyber security journals including IEEE Security & Privacy, IEEE TDSC, IEEE TIFS, Computers & Security.



Jin Li is currently a professor and vice dean of School of Computer Science, Guangzhou University in China. He received his B.S. (2002) and M.S. (2004) from Southwest University and Sun Yat-sen University, both in Mathematics. He got his Ph.D degree in information security from Sun Yat-sen University at 2007. His research interests include design of secure and privacy-preserving protocols for computing in various new computing environments, including Cloud computing, Internet-of-Things, Blockchain and machine learning. He proposed new and efficient methods of secure fuzzy keyword search and reliable key management of deduplication in cloud computing. The above papers and results in these topics have been widely cited and applied by researchers and industry. He served as a senior researcher and visiting professor at Korea Advanced Institute of Technology and Illinois Institute of Technology and VirginiaTech, respectively. He has published more than 100 papers in international conferences and journals, including IEEE TDSC, IEEE INFOCOM, IEEE TIFS, IEEE TPDS, IEEE TC and ESORICS etc. Three papers have been selected as the best paper in the international conferences. His work has been cited more than 10,300 times at Google Scholar and the H-Index is 42. He also served as program chairs/publicity chairs for

many international conferences such as IEEE Blockchain 2018, ICA3PP2018, IEEE CNS 2015, IEEE CSE 2017, IEEE EUC 2017, ISICA 2015 etc. He is associate editor of Information Sciences and has been guest editors for several journals such as MONET, JNCA and FGCS etc. He has been invited to give keynote talks in several international conferences such as ISPEC 2016 etc. He received three National Science Foundation of China (NSFC) Grants and more than ten Grants from Guangdong Province and other departments for the research on security and privacy in new computing environments. In 2017, he received NSFC Outstanding Youth Foundation. In 2018, he was selected as a Young Changjiang River Scholar in China.