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Zheng Xu · Mohammed Atiquzzaman
Editors

2020 International Conference on Applications and Techniques in Cyber Intelligence

Applications and Techniques in Cyber Intelligence (ATCI 2020)

Springer

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Foreword

The 2020 International Conference on Applications and Techniques in Cyber Intelligence (ATCI 2020), building on the previous successes in Huainan, China (2019); Shanghai, China (2018); Ningbo, China (2017); Guangzhou, China (2016); Dallas, USA (2015); Beijing, China (2014); and Sydney, Australia (2013), is proud to be in the 8th consecutive conference year. Although it was planned to be conducted in Fuyang between June 19 and 20, 2020, it has moved online due to COVID-19.

The purpose of ATCI 2020 is to provide a forum for presentation and discussion of innovative theory, methodology and applied ideas, cutting-edge research results, and novel techniques, methods, and applications on all aspects of cyber and electronics security and intelligence. The conference establishes an international forum and aims to bring recent advances in the ever-expanding cybersecurity area including its fundamentals, algorithmic developments, and applications.

Each paper was reviewed by at least two independent experts. The conference would not have been a reality without the contributions of the authors. We sincerely thank all the authors for their valuable contributions. We would like to express our appreciation to all the members of the Program Committee for their valuable efforts in the review process that helped us to guarantee the highest quality of the selected papers for the conference.

We would like to express our thanks to the strong support of Fuyang Normal University, Fuyang, China, as well as the general chairs, publication chairs, organizing chairs, Program Committee Members, and all volunteers.

Our special thanks are due also to the editors of Springer book series "Advances in Intelligent Systems and Computing," Thomas Ditzinger, Holger Schaepe, Dagmar Orth, and Arumugam Deivasigamani for their assistance throughout the publication process.

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Welcome Message

The 2020 International Conference on Applications and Techniques in Cyber Intelligence (ATCI 2020), building on the previous successes in Huainan, China (2019); Shanghai, China (2018); Ningbo, China (2017); Guangzhou, China (2016); Dallas, USA (2015); Beijing, China (2014); and Sydney, Australia (2013), is proud to be in the 8th consecutive conference year in Fuyang at June 19–20, 2020. Due to COVID-19, ATCI 2020 has moved online.

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We are organizing the ATCI 2020 Conference by Fuyang Normal University, China. It will feature a technical program of refereed papers selected by the International Program Committee, keynote address.

ATCI 2020 Keynotes

Tharam Dillon
La Trobe University, Australia, IEEE Life Fellow

Professor Tharam S. Dillon has published more than 1000 papers in international conferences and journals, ten authored books, and six edited books. His work has over 16,000 citations and an H-Index of 57 (Google Scholar). His research includes trust, risk, advanced analytics and data mining, neural networks, big data, Web semantics, XML systems, ontologies, cloud computing, hybrid neuro-symbolic systems, Internet of things, software engineering, and power systems computation. He is Life Fellow of the IEEE (USA). He is Fellow of ACS and IEAust. He has held Full Professor positions at La Trobe University, Hong Kong Polytechnic University, and Curtin University. He was Dean of the Faculty of IT at University of Technology Sydney. He was Chair of the Working Groups IFIP 12.7 on Computational Intelligence, IFIP 2.12/12.4 on Web Semantics, the Technical Committees IEEE /IES on Industrial Informatics, and IFIP TC12 on Artificial Intelligence. He is General Chair of the On The Move (OTM) Conferences since 2010. He has been invited to give over 57 keynotes at international conferences. He is Adjunct Professor at La Trobe University, Australia. James Christopher Westland

James Christopher Westland

Professor James Christopher Westland is currently Professor in the Department of Information & Decision Sciences at the University of Illinois at Chicago. He has a BA in statistics and an MBA in accounting from Indiana University and received his PhD in computers and information systems from the University of Michigan. He has professional experience in the USA as a certified public accountant and as a consultant in technology law in the USA, Europe, Latin America, and Asia. He is Author of numerous academic papers and of seven books: Global Electronic Commerce (MIT Press 2000); Global Innovation Management (Palgrave Macmillan 2nd ed 2017); Red Wired: China's Internet Revolution (Marshall Cavendish, 2010); Structural Equation Modeling (Springer 2015); Financial Dynamics (Wiley 2003); Valuing Technology (Wiley 2002); and Statistical Auditing with R (forthcoming 2018). He is Editor in Chief of Electronic Commerce Research (Springer) and has served on editorial boards of several other information technology journals including Management Science, ISR, ECRA, IJEC, and others. He has served on the faculties at the University of Michigan, University of Southern California, Hong Kong University of Science and Technology, Tsinghua University, University of Science and Technology of China, Harbin Institute of Technology, and other academic institutions. In 2012, he received High-Level Foreign Expert status in China under the 1000 Talents Plan and is currently Overseas Chair Professor at Beihang University. He has advised on patent, valuation, and technology strategy for numerous technology firms.

Vijayan Sugumaran

Vijayan Sugumaran is Professor of management information systems and Chair of the Department of Decision and Information Sciences at Oakland University, Rochester, Michigan, USA. He is also Co-Director of the Center for Data Science and Big Data Analytics at Oakland University. He received his PhD in information technology from George Mason University, Fairfax, Virginia, USA. His research interests are in the areas of big data management and analytics, ontologies and semantic Web, intelligent agent, and multi-agent systems. He has published over 200 peer-reviewed articles in journals, conferences, and books. He has edited twelve books and serves on the Editorial Board of eight journals. He has published in top-tier journals such as Information Systems Research, ACM Transactions on Database Systems, Communications of the ACM, IEEE Transactions on Big Data, IEEE Transactions on Engineering Management, IEEE Transactions on Education, and IEEE Software. He is Editor in Chief of the International Journal of Intelligent Information Technologies. He is Chair of the Intelligent Agent and Multi-Agent Systems mini-track for Americas Conference on Information Systems (AMCIS 1999–2019). He has served as Program Chair for the 14th Workshop on E-Business (WeB2015), the International Conference on Applications of Natural Language to Information Systems (NLDB 2008, NLDB 2013, NLDB 2016, and NLDB 2019), the 29th Australasian Conference on Information Systems (ACIS 2018), the 14th Annual Conference of Midwest Association for Information Systems, 2019, and the 5th IEEE International Conference on Big Data Service and Applications, 2019. He also regularly serves as Program Committee Member for numerous national and international conferences.

Jemal Abawajy

Jemal Abawajy is Faculty Member at Deakin University and has published more than 100 articles in refereed journals and conferences as well as a number of technical reports. He is on the editorial board of several international journals and edited several international journals and conference proceedings. He has also been Member of the Organizing Committee for over 60 international conferences and workshops serving in various capacities including best paper award chair, general co-chair, publication chair, vice-chair, and Program Committee. He is actively involved in funded research in building secure, efficient, and reliable infrastructures for large-scale distributed systems. Toward this vision, he is working in several areas including: pervasive and networked systems (mobile, wireless network, sensor networks, grid, cluster, and P2P), e-science and e-business technologies and applications, and performance analysis and evaluation.

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About Fuyang Normal University

Fuyang Normal University (hereinafter referred to as FYNU) is located in Fuyang, the eastern gateway city of the Central Plains Economic Region, and the regional center of the Northwest of Anhui Province. As a birthplace of many outstanding personages, Fuyang boasts a long cultural history, enriched by the heritage handed down from such famous cultural elites as Guanzi, Laozi, Zhuangzi, Cao Cao, Cao Pi, Cao Zhi, Ouyang Xiu and Zeng Gong. FYNU enjoys pleasant environment, easy traffic and favorable location with ancient Yingzhou West Lake, Beijing-Kowloon Railway and a 4C airport in the vicinity.

FYNU now has more than 1000 teachers working hard in disparate disciplines, among whom 412 hold advanced professional titles including 126 full professors, 92% of the teachers hold master's degrees, and 31.65% hold doctor's degrees. Eighty-six teachers are or have earned the titles of "Anhui Provincial Academic and Technological Leader" or candidates, "Anhui Provincial Excellent Talent", recipients of special allowances offered by the State Council or Anhui Provincial government, "National Excellent Teacher", "Baogang Excellent Teacher", "Anhui Provincial Excellent Teacher", or "Anhui Provincial Famous Teacher" respectively. As many as 229 teachers are master or doctor supervisors. Moreover, FYNU engages 109 adjunct professors, including Liu Depei, academician and former vice president of Chinese Academy of Engineering, Chen Guoliang and Fang Weihai, academicians of Chinese Academy of Sciences.