## **FOREWORD**

The Commemorative Tenth International Symposium on Information and Communication Technology (SoICT 2019) is held on December 4–6, 2019, in Ha Noi and Ha Long, Vietnam. SoICT 2019 is an international academic forum for researchers and graduate students to share their latest research findings and to identify future challenges in computer science.

SoICT 2019 has received papers from 28 countries in four major areas of research including AI and Big Data Analytics, Network Communication and Security, Computer Vision and Pattern Recognition, and Software Engineering and Applied Soft Computing, in addition to a special session on ICT Solution for E-Governance. The Program Committee has followed a formal standard reviewing process; bidding, reviewing, and deliberating for selecting 63 papers for regular presentation, and 14 papers for poster presentation and publication in the proceedings. It is our great honor to receive world-class invited speakers Hanan Samet (The University of Maryland, College Park, USA), Wanlei Zhou (University of Technology Sydney, Australia), Albert Cabellos (Universitat Politècnica de Catalunya, Spain), Abdelhamid Mellouk (Université Paris-Est, France), Masatoshi Yoshikawa (Kyoto University, Japan), and Toshihiko Yamasaki (The University of Tokyo, Japan). Two Keynote Speakers from industry shares academia-industrial collaboration and their activities: Kim In Soo (Samsung Vietnam Mobile R&D Center, Vietnam) and Le Nhan Tam (IBM Vietnam).

We would like to thank the Program Committee members for their great responsibility in reviewing papers, thank all track chairs for actively monitoring the review and deliberation process and for proposing decisions on papers: Makoto Onizuka (Osaka University, Japan), Xuan Hoai Nguyen (AI Academy Vietnam, Vietnam), Nguyen Thanh Thi (Deakin University, Australia), Takumi Miyoshi (Shibaura Institute of Technology, Japan), Dang The Ngoc (Posts and Telecommunications Institute of Technology, Vietnam), Kien Nguyen (Chiba University, Japan), Stuart Perry (University of Technology Sydney, Australia), Nguyen Thi Thuy (Vietnam National University of Agriculture, Vietnam), Benjamin Renoust (Osaka University, Japan), Mikio Aoyama (Nanzan University, Japan), Tran Minh Triet (Hochiminh University of Science, Vietnam) and Nguyen Ngoc Hoa (Vietnam National University, Vietnam). In particular, we would like to thank all Organizing Committee members, who have worked hard to ensure the best quality of the symposium.

We are grateful to Vietnam National Foundation for Science and Technology Development (NAFOSTED), Samsung Electronics Vietnam, Office of Naval Research Global, U.S. Army Combat Capabilities Development Command (CCDC) Pacific for financial support.

Finally, we would like to thank all authors and participants for making SoICT 2019 a memorable and enjoyable academic event in Ha Noi and Ha Long, Vietnam.

SoICT 2019 Program Co-Chairs

Huynh Thi Thanh Binh, Hanoi University of Science and Technology, Vietnam
Ichiro IDE, Nagoya University, Japan
Michel Toulouse, Vietnam German University, Vietnam
Shui Yu, University of Technology Sydney, Australia

SoICT 2019 General Co-Chairs

Marc Bui, EPHE, France
Le Minh Ha, Vietnam Institute for Advanced Study in Mathematics, Vietnam
Zhenjiang Hu, Peking University, China / NII, Japan
Huynh Quyet Thang, Hanoi University of Science and Technology, Vietnam