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IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is generally smaller and occasionally by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

IFIP distinguishes three types of institutional membership: Country Representative Members, Members at Large, and Associate Members. The type of organization that can apply for membership is a wide variety and includes national or international societies of individual computer scientists/ICT professionals, associations or federations of such societies, government institutions/government related organizations, national or international research institutes or consortia, universities, academies of sciences, companies, national or international associations or federations of companies.

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Michael Friedewald · Melek Önen · Eva Lievens · Stephan Krenn · Samuel Fricker (Eds.)

# Privacy and Identity Management

Data for Better Living: AI and Privacy

14th IFIP WG 9.2, 9.6/11.7, 11.6/SIG 9.2.2 International Summer School Windisch, Switzerland, August 19–23, 2019 Revised Selected Papers



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#### **Preface**

This volume contains the proceedings of the 14th IFIP Summer School on Privacy and Identity Management – "Data for Better Living: Artificial Intelligence and Privacy" – which took place during August 19–23, 2019, in Brugg/Windisch, Switzerland.

The 14th IFIP Summer School was a joint effort among IFIP Working Groups 9.2, 9.6/11.7, 11.6, Special Interest Group 9.2.2 in co-operation with the International Association for Cryptologic Research (IACR), and several European and national projects: the EU H2020 projects PAPAYA, CyberSec4Europe, e-SIDES, SPARTA, and the German Privacy Forum (Forum Privatheit). It was hosted and also supported by the University of Applied Sciences Northwestern Switzerland (FHNW).

This IFIP Summer School brought together more than 60 junior and senior researchers and practitioners from different parts of the world from many disciplines, including many young entrants to the field. They came to share their ideas, build a network, gain experience in presenting their research, and have the opportunity to publish a paper through these proceedings.

One of the goals of the IFIP Summer School is to encourage the publication of thorough research papers by students and emerging scholars. To this end, it had a three-phase review process for submitted papers. In the first phase, authors were invited to submit short abstracts of their work. Abstracts within the scope of the call were selected for presentation at the school. After the school, authors were encouraged to submit full papers of their work and received two to three reviews by members of the Program Committee. They were then given time to revise and resubmit their papers for inclusion in these proceedings. In total, 31 abstracts were submitted, out of which 22 were finally accepted, including the papers by Shukun Tokas, Olaf Owe, and Toktam Ramezanifarkhani on "Language-Based Mechanisms for Privacy by Design" and Teresa Anna Steiner on "Differential Privacy in Online Dating Recommendation Systems," which were judged to be the summer school's best student papers.

In addition to the submitted papers, this volume also includes reviewed papers summarizing the results of workshops and tutorials that were held at the summer school as well as papers contributed by several of the invited speakers.

We are grateful to all contributors of the summer school and especially to the Program Committee for reviewing the abstracts and papers as well as advising the authors on their revisions. Our thanks go to all supporting projects and especially to FNWH for their support in hosting the school.

January 2019

Michael Friedewald Melek Önen Eva Lievens Stephan Krenn Samuel Fricker

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