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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.*

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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.

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Lynette Drevin · Marianthi Theocharidou (Eds.)

Information Security Education

Education in Proactive Information Security

12th IFIP WG 11.8 World Conference, WISE 12
Lisbon, Portugal, June 25–27, 2019
Proceedings

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Preface

This volume contains the papers presented at the 12th World Conference on Information Security Education (WISE 12) held during June 25–27, 2019, in Lisbon. It was held in conjunction with the 34th IFIP International Conference on Information Security and Privacy Protection (IFIP SEC 2019). WISE 12 was organized by the IFIP Working Group 11.8, which is an international group of people from academia, government, and private organizations who volunteer their time and effort to increase knowledge in the very broad field of information security through education. WG 11.8 has worked to increase information security education and awareness for almost two decades. This year, WG11.8 organized the 12th conference of a successful series under the theme "Education in Proactive Information Security." We received 26 submissions from around the world. Each submission was blind reviewed by at least three international Program Committee members. The committee decided to accept 12 full papers, and thus the acceptance rate for the papers is 46%.

During the conference, a working group discussion addressed the "Graduate Student Pipeline Problem in Cybersecurity." It was chaired by Susanne Wetzel of Stevens Institute of Technology (USA). The topic is driven by surveys and observations in the USA, which indicate a mismatch between open faculty positions in cybersecurity and the number of accepted academic positions from the newly awarded PhDs in cybersecurity. In fact, the majority of them joined industry. The workgroup discussed the effect on education of the next generation of students in cybersecurity and explored options to address the problem. With high-paying jobs in industry that are already available to graduates from bachelor or master programs, what is the incentive for someone to pursue a PhD? What can and needs to be done in order to attract graduates to academic instead of industry jobs?

This conference took place thanks to the support and commitment of many individuals. First, we would like to thank all TC-11 members for continually giving us the opportunity to serve the working group and organize the WISE conferences. Our sincere appreciation also goes to the members of the Program Committee, to the external reviewers, and to the authors who trusted us with their intellectual work. We are grateful for the support of WISE11.8 Officers Lynn Futcher, Matt Bishop, Natalia Miloslavskaya, and Erik Moore. Finally, we would like to thank the local organizers for the support. As for the preparation of this volume, we sincerely thank Erika Siebert-Cole and our publisher Springer for their assistance.

June 2019

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