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Shiva Raj Pokhrel · Min Yu · Gang Li (Eds.)

Applications and Techniques in Information Security

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Revised Selected Papers

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Preface

The 2021 International Conference on Applications and Technologies in Information Security (ATIS 2021) was the 12th event in the ATIS series, which started in 2010. The purpose of ATIS is to provide a forum for presentation and discussion of innovative ideas, research results, applications, and experience from around the world. The annual ATIS conference highlights new results in the design and analysis of digital security hardware and software implementations. ATIS provides a valuable connection between the theoretical and implementation communities and attracts participants from industry, academia, and government organizations.

As academic research in information security has developed over the last twenty or so years, applications and techniques are being developed to be of specific use in this area. These include wavelets and their applications in digital forensics, classification algorithms for use in malicious software detection, and genetic algorithms custom-made for the cryptographic community, etc.

ATIS 2021 focused on all aspects of new theories, novel techniques, and innovative applications of Cybersecurity, Zero Trust Access (ZTA) Architecture, and Privacy/Security of Autonomous Vehicles. The increasing trends towards remote working, working from home, and distributed collaboration have challenged previously established security and privacy notions, particularly the perimeter-based security architecture. This ensuing trend has driven the need for a radical redesign of the security architectures and has already led to the emergence of new concepts such as ZTA. In contrast to the existing security notions, ZTA aims to think about security in a new philosophical way—to continuously verify every user and every device before granting access to a network or an asset.

Our major focus in ATIS 2021 was to uncover the dynamics of the vulnerabilities posed by new enterprise demands such as bring your own device (BYOD) including others, and develop new insights that requires novel approaches and advances towards more intelligent, agile and adaptable framework so as to a constantly cope with the evolving threat landscape. ATIS 2021 received a total of 57 papers, of which 16 were accepted. All submitted papers followed a double-blind review policy. On average, each paper received six peer reviews.

January 2022

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