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CCS '23

Proceedings of the 2023 ACM SIGSAC Conference on Computer and Communications Security

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Message from the ACM CCS 2023 General Co-Chairs

On behalf of the ACM CCS 2023 Organizing Committee, we welcome you to the 30th ACM SIGSAC Conference on Computer and Communications Security (CCS). ACM CCS continues to be the premier security conference, where researchers, practitioners, and educators come together to present, learn, and debate research, innovation, and trends in the field of Computer and Communications Security.

This is the first time ACM CCS is held in Copenhagen Denmark, and we are happy to be back to a fully physical event after COVID-19. Copenhagen ranks high amongst the livable cities in the world and the size matches the national population of 6 million Danes. We like to think that the city is small, but still offers some of the urban metropolis vibe that is associated with capitals around the world. November in Denmark is the foundation of the Nordic noir genre of tv-series and detective novels, but despite the darkness and the inclement weather, we hope that you will explore the city and enjoy your stay in Copenhagen.

This year's main conference is one of the largest with 235 paper presentations over three days. We are also honored to have two distinguished keynote speakers for the main conference: Michael Reiter from Duke University (USA), and Lorrie Faith Craynor from Carnegie Mellon University (USA). In addition, fourteen workshops and one tutorial will take place on the pre-conference and post-conference days to discuss numerous specialized topics.

We are particularly thankful to the Program Chairs, Cas Cremers and Engin Kirda, the Track chairs, and all Program Committee members, as well as all the external reviewers, for their technical expertise and diligence to make an excellent technical program. We are thankful to our Workshop Chair (Jun Dai), the chairs of our co-located workshops and tutorials, and the workshop program committees, for assembling great workshop and tutorial programs. We express our gratitude to our organizing committee members: Publicity Chairs (Wenjuan Li and Rongxing Lu), Web Chairs (Wei-Yang Chiu and Brooke Lampe), Proceedings Chairs (Carter Yagemann and Emmanouil Vasilomanolakis), Sponsorship Chair (Bo Luo), Poster/Demo Chair (Sara Foresti), Student Travel Grant Chair (Jun Xu), and Artifact Evaluation Chair (Thorsten Holz). CCS 2023 would not have been possible without their devotion.

Furthermore, we would like to thank ACM and its Special Interest Group on Security, Audit and Control (SIGSAC) for their sponsorship of ACM CCS 2023. We offer our gratitude to our corporate sponsors for their generous support: Huawei, the National Science Foundation (NSF), Technology Innovation Institute (TII), Twenty-Second Century Dora Technology, Ant Research, IBM, TikTok, and Abelian.

Finally, we want to extend our gratitude to all the authors and volunteers for your involvement in ACM CCS 2023. It is you who make CCS a premier conference in Computer and Communications Security.

Sincerely,

ACM CCS 2023 General Chairs!

Weizhi Meng
Technical University of Denmark

Christian D. Jensen
Technical University of Denmark

Welcome from the ACM CCS 2023 Program Co-Chairs

Welcome to the proceedings of the 30th ACM Conference on Computer and Communications Security (CCS).

The task of the Program Committee, led by the Program Chairs and the Track Chairs, was to select the papers that would appear in this edition of the conference. Keeping with the tradition, we had two reviewing cycles, with submission deadlines in January and May, each with a roughly 2.5-month review cycle. Due to the record number of papers submitted, and to give to the authors the opportunity to submit their papers elsewhere, some papers were rejected early in the process, as the result of receiving two negative reviews. For the remaining papers, the authors were given the opportunity to engage in an interactive rebuttal to address specific concerns of the reviewers. By the end of each cycle, each submitted paper was marked for acceptance, conditional acceptance (shepherding), rejection, or revision. Papers in the last category were allowed to be resubmitted for another round of review, under the assumption that they would be accepted if the requirements set by the reviewers were met satisfactorily. All submissions were reviewed by a Program Committee of over 440 security and privacy experts from around the world, along with many expert sub-reviewers from outside the committee. The Program Co-Chairs were assisted by ten Track Chairs: Leyla Bilge, Manuel Egele, Dario Fiore, Rob Jansen, Ghassan Karame, Steve Kremer, Veelasha Moonsamy, Nick Nikiforakis, Elissa Redmiles, and Selcuk Uluagac, who are recognized experts in their respective subfields. The Track Chairs were also involved in selecting the top reviewers and the distinguished paper awards.

The January cycle received 427 submissions, with 29 papers accepted (possibly with shepherding). An additional 48 papers were chosen for revision, with 47 of those eventually being accepted after the revised version was submitted. Of the papers that were rejected, 193 were rejected early. A total of 795 papers were submitted to the May cycle, with 90 papers accepted (possibly with shepherding) and 69 papers chosen to be revised. From the latter group, 68 papers were eventually accepted. Of the rejected papers, 367 were rejected early. Altogether, 235 out of 1222 submissions were accepted, for an acceptance rate of 19.15%. The accepted papers cover a wide range of topics in security, including web security, machine learning, network security, formal methods, software security, IoT/CPS security, applied cryptography, privacy and anonymity, security usability and measurement, blockchain, and distributed systems security.

We thank the Track Chairs, PC members, and external reviewers for their contributions to the conference and for their dedication to high-quality reviewing. We are also extremely grateful to the General Chairs, Weizhi Meng and Christian D. Jensen, for organizing the conference, the Proceedings Chairs, Emmanouil Vasilomanolakis and Carter Yagemann, the Workshop Chair, Jun Dai, the Poster/Demo chair, Sara Foresti, as well as the many other chairs that helped us the diversity of tasks that are critical for establishing a program of this size. We could not have done all of this without you!

We also thank all the authors for submitting their outstanding research to ACM CCS. We hope you enjoy the conference!

Cas Cremers
CISPA Helmholtz Center for Information Security

Engin Kirda
Khoury College of Computer Sciences

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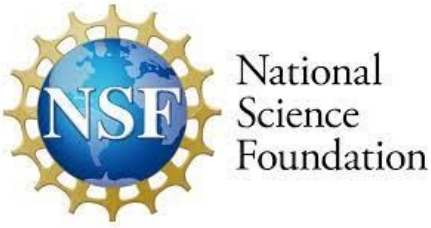

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