ACM WiSec 2021





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Program Committee Chairs & General Chairs Report

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General Words

<u>ACM WiSec 2021</u> (https://nyuad.nyu.edu/wisec21), the 14th ACM Conference on Security and Privacy in Wireless and Mobile Networks, builds upon a long history of academic events focused on the intersection of wireless communication, mobile devices, security, and privacy. The first WiSec conference in 2008 merged three previous workshops: ESAS (European Workshop on Security of Ad Hoc and Sensor Networks), SASN (ACM Workshop on Security in Ad Hoc and Sensor Networks), and WiSec (ACM Wireless Security Workshop). Since then, secure wireless and mobile communication has become ever more important, and ACM WiSec has served the academic community as the premier venue for this intersection of scientific research areas. It is our honor and pleasure to have been acting as technical program chairs this year. This report intends to give an overview of the process leading to the 2021 program and the conference as a whole.

ACM WiSec 2021 took place virtually June 28 – July 2, 2021, with four days of technical program, three keynote presentations, one panel on Digital Vaccination Passports, one day with tutorials on Wireless Research Frameworks and Tools, and the ACM WiseML'21 workshop. Due to the virtual event, we limited the conference timings to six hours per day and timings were adjusted to cover (early) morning in the US West coast and (late) evening in central Asia. The dates were selected to avoid both major holidays in various geographic areas and



overlapping with other conferences that attendees might also want to attend (IEEE S&P, PETS, etc.). The individual sessions on each day were scheduled to best accommodate the timezone of all speakers.

Paper Submissions

For various reasons, including its tight focus and still manageable size of the community, ACM WiSec has not (yet) switched to a quarterly submission model. There was only one submission deadline on March 25 (23:39 AoE), extended from the original deadline on March 18.

We received a total number of 121 submissions, out of which six were desk-rejected because they were considered significantly out of scope of the published call for papers or were not properly anonymized. Four papers were initially not fully anonymized, but the authors were given a second deadline and fixed their double-blinding issues before the papers were made accessible to the program committee.

Program Committee

In selecting the program committee, our first priority was balance in different aspects: research areas, gender, geographic region, and seniority in the community. In addition to directly inviting members of the community, we also opened a call for nominations, through which new community members joined the PC. Out of 54 PC members, 13 are female (a significantly higher number was invited, but more female than male candidates had to decline the invitation). It is clear that the lack of women in the community puts additional pressure on them, as some get invited to 10+ PCs per year. 21 of the PC members came from North America, 26 from Europe, six from Asia and one from Oceania; 30% of the PC served for the first time at ACM WiSec, bringing in new perspectives. 17 external reviewers were invited by the PC members to add their specific research expertise to the process. Most of the new PC members added were from the lightweight crypto community covering the topics like side-channel attacks, cryptographic protocols for wireless communication etc.

Most deadlines were intentionally set to be on a Friday (anywhere on Earth, meaning Thursday for many regions) to be cognizant of a healthy work-life balance for authors as well as program committee members.

Review and Shepherding Process

The remaining (non-desk-rejected) 115 submissions were first opened for bidding from March 28 to March 30. Paper assignment to program committee members was done mostly automatically through topics and bidding preferences set in HotCRP, with only some manual corrections where automatic assignment did not find a sufficient number of reviewers or seemed sub-optimal.



The initial, double-blind review phase was short with only three weeks to offer quick turnaround time for authors. ACM WiSec has long optimized for authors to both give focused, high-quality feedback and do so quickly. The single submission and review time frame per year allows the program committee to block this time period and provide quick response.

From April 23 to May 2, discussions among PC members happened through HotCRP comments in parallel to a second round of reviews for papers with initially conflicting reviews and missing reviews. Every paper was assigned a discussion lead with the request to focus on positive aspects and try to argue for reasons to accept rather than reject a paper. Over both phases, PC members and external reviewers contributed 349 reviews and 698 comments.

Author notification went out on May 5 with a camera-ready deadline of May 26. Most papers received 3 reviews, while 12 received 4 reviews through the second round. The distribution of reviews received over time mirrors the expectation that most reviews are entered within the last week before the review deadline. Reviews received after the deadline represent both late reviews as well as additional, quick turnaround reviews we requested for papers with highly diverging scores:





Final review scores did not show a significant correlation with reviewer experience, indicating that WiSec reviewers do not feel biased towards or against topics that best match their own expertise:



Thanks to the dedicated work of the program committee, we were able to adhere to our original timeline with tight time constraints on the review process, **arriving at decisions less than six weeks after the paper submission**. Providing quality peer reviews in a short time frame is a great asset for authors. The turnaround time at WiSec remains among the fastest for any reputable academic conference or journal, requiring strong commitment from the program committee whose dedicated members deserve special praise, not only during a still-ongoing pandemic.

While ACM WiSec only had a single submission deadline, we have adopted one of the most important parts of the rolling submission model, which is the chance for authors to revise their paper - specifically through a shepherding process. The majority of papers with positive reviews were only conditionally accepted (18 conditionally, 16 directly accepted) after the review phase and assigned a shepherd to help improve the paper and react to reviews. All shepherds and authors were clearly informed that acceptance was dependent on the shepherd's final verdict, and that improvements needed to address all important points to be fit for publication. We are very happy that all 18 papers were also accepted in the shepherding phase, indicating that the option to revise parts of a paper rather than reject it helps the community overall.



Overall, 34 papers were accepted: 27 full papers, six short papers and one SoK paper (the first ever WiSec-SoK). Some of the papers rejected from the main program were re-submitted as posters and/or demonstrations together with other original submissions, resulting in five accepted posters and six demonstrations. Authors of accepted papers were also invited to submit their artefacts for the replicability label. Four papers made all artefacts available as required to reproduce the work and received the replicability label.



Looking deeper into submitted and accepted paper statistics, we see a slight shift in the paper topics towards connections with IoT and cyber-physical systems:



Papers by topics



We also (still) see a significant difference in submitted vs. accepted papers by country of main author, which mirrors the history of previous WiSec conferences:



The Conference

The conference was convened as a fully virtual event. In terms of virtual platform, we used:

- Zoom meetings for delivering the conference program (for registered participants),
- **Slack** as messenger support for extra information and as an asynchronous communication channel to all participants as well as for direct messages between participants (only registered participants)
- **GatherTown** for social gatherings and the demo/poster session (only registered participants)
- Live-streaming to Youtube (open to the public)
- Box cloud storage for letting speakers upload their pre-recorded presentations

In a number of sessions, the live streaming on Youtube was attended by more people than the Zoom meeting.

The conference was well advertised and supported by tweets on Twitter (more than 60 tweets, one dozen retweets) and was broadly advertised in various mailing lists.



Key Statistics from the Conference

ACM WiSec 2021 had 115 paid registrations (who also had access to ACM WiseML'21; there were additional registrations for WiseML'21). The majority of WiSec'21 attendees were PhD students and professors, but also researchers and industrial partners participated.

- Title: 44 phd student, 26 professor, 18 researchers (incl. PostDocs), 10 industry, 8 students, 9 other
- Gender: 86 male, 14 female, 14 not provided, 1 diverse
- Registrations per country: 40 (US), 22 (DE), 8 (FR, SE), 7 (AE), 6 (NL), 5 (BE, CH), 3 (GB), 2 (CA), 1 (AT, CN, DK, FI, HK, JP, PT, RO, SG)



The geographical distribution is dominated by the US/Canada and Europe, but a number of other countries (China, Hongkong, Japan, Singapur, UAE) were also represented:





In total, ACM WiSec'21 and ACM WiseML'21 had 153 registered participants (incl. panelists, keynote speakers, etc.).

Demo & Poster Session

From the Demo & Poster Chairs: After the acceptance notification and uploading their final PDF documents to the Demo & Poster HotCRP instance, the authors were invited to participate in a short video interview with the poster and demo chair, who then produced a short (90 seconds) trailer based on the interview and additional material that the authors provided. The interviews were published at the start of the conference, and were also shown on Zoom during the lunch breaks. The online trailers for the Demo & Poster session had about 20-40 views on average.

The actual session itself then happened on GatherTown and was well accepted by the participants. The same platform was already used for social gatherings on the previous days of the conference so that the audience was already familiar with it. The participants were provided with a virtual whiteboard and they could also upload additional material for their presentation.

To pick the best Demo & Poster Award, we ran a poll on Slack (registered participants only) where each participant could vote for the best demo and the best poster (1 vote per category per participant, anonymous votes).

Tutorials (Wireless Research Frameworks and Tools)

From the Tutorials Chair: The tutorial program covered various aspects about wireless security analysis and setups: Software-defined radios, a 5G testbed, and various ways to analyze and interact with existing wireless implementations. The tutorial speakers were very experienced, covering multiple years of practical world in their field. As such, the program with 30-minute tutorials was rather dense, but perfect to grasp the basic ideas and get a starting point for a new project.

Overall, there was a slight audience shift. The main program had more attendants in Zoom, and got less attention via YouTube. In contrast, the applicability of the tutorials also attracted non-scientific viewers on YouTube, who additionally joined the Q&A sessions. The tutorials could also be a great format to get new people into wireless research and connect them with universities that have large lab setups.

