

General Message from the IWCT Chairs

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We would like to welcome you to the 12th **International Workshop on Combinatorial Testing (IWCT 2023)**, which is organized in conjunction with the 16th IEEE International Conference on Software Testing, Verification and Validation (ICST 2023) in Dublin. After the successful editions in Montreal (2012), Luxembourg (2013), Cleveland (2014), Graz (2015), Chicago (2016), Tokyo (2017), Vasteras (2018), Xi'an (2019), Porto (2020, virtual), virtual in 2021 and virtual in 2022, we are very pleased to see IWCT taking place as a primarily physical workshop again in 2023.

IWCT focuses on many aspects of combinatorial testing, including those classical ones (e.g., like test generation), but also those regarding new fields of application (e.g., like CT for machine learning). This year, we received 17 high quality submissions from authors coming from Asia, Europe, and the US. Each paper was reviewed by at least 3 members of the program committee. From the 17 submission, we finally accepted 13 papers for publication, among the categories long-[1]–[7] and short papers [8], [9], as well as Journal-First [10]–[13]. For the second time, IWCT 2023 hosts again a combinatorial test generation tool competition [14]. The IWCT 2023 program comprises research papers dealing with various aspects of combinatorial testing. Figure 1 presents a word cloud generated from the titles of accepted papers at IWCT 2023 showing the diverse topics covered this year. Besides expected words like *test* and *combinatorial*, new terms start to appear, like *ordered*, *autoencoder*, and *driving*.

We want to thank all the authors for their contributions, our keynote speaker for sharing her broad expertise, the program committee members for their more than valuable work on selecting the papers to be presented at IWCT 2023, and the steering committee members for their support. Without the efforts and dedication of the combinatorial testing community events like IWCT would not be possible and we are very grateful for this support! We are looking forward to an excellent IWCT 2023, the paper presentations, as well as discussions among participants. Furthermore, we sincerely hope that you enjoy both IWCT and ICST this year, especially since they both take place also in the form of a physical meeting again!

REFERENCES

- [1] Andrea Bombarda and Angelo Gargantini, "Incremental generation of combinatorial test suites starting from existing seed tests".
- [2] Tyler Cody and Laura Freeman, "Metric Learning Improves the Ability of Combinatorial Coverage Metrics to Anticipate Classification Error".



Fig. 1. Word cloud of the titles of accepted papers at IWCT 2023.

- [3] Krishna Khadka, Jaganmohan Chandrasekaran, Yu Lei, Raghu N. Kacker and Richard Kuhn, "Synthetic Data Generation Using Combinatorial Testing and Variational Autoencoder".
- [4] Ludwig Kampel, Michael Wagner, Dimitris E. Simos, Mihai Nica, Dino Dodig, David Kaufmann and Franz Wotawa, "Applying CT-FLA for AEB Function Testing: A Virtual Driving Case Study".
- [5] Gang Qin, Junjun Zheng and Tatsuhiro Tsuchiya, "Meta-Heuristic Algorithm for Constructing Higher-Index Covering Arrays for Combinatorial Interaction Testing".
- [6] Simon Diemert, Adam Casey and Jeremiah Robertson, "Challenging Autonomy with Combinatorial Testing".
- [7] Rick Kuhn, M S Raunak and Raghu Kacker, "Ordered t-way Combinations for Testing State-based Systems".
- [8] Hanefi Mercan and Cemal Yilmaz, "Hints in Unified Combinatorial Interaction Testing".
- [9] Jovan Zivanovic, Manuel Leithner, Dimitris E. Simos, Michael Pitzer and Peter J. Slanina, "Combinatorial Methods for HTML Sanitizer Security Testing".
- [10] Michael Wagner, Charles Colbourn and Dimitris E. Simos, "Summary of In-Parameter-Order strategies for covering perfect hash families".
- [11] Ludwig Kampel, Paris Kitsos and Dimitris E. Simos, "Summary of Locating Hardware Trojans using Combinatorial Testing for Cryptographic Circuits".
- [12] Bernhard Garn, Jovan Zivanovic, Manuel Leithner and Dimitris E. Simos, "Summary of Combinatorial Methods for Dynamic Gray-Box SQL Injection Testing".
- [13] Bernhard Garn, Dominik-Philip Schreiber, Dimitris E. Simos, Rick Kuhn, Jeff Voas and Raghu Kacker, "Summary of Combinatorial methods for testing Internet of Things smart home systems".
- [14] <https://fmselab.github.io/ct-competition/>