

IROS 2021 Online in Prague

By Libor Preucil and Robert Babuska

The 2021 IEEE/Robotics Society of Japan International Conference on Intelligent Robots and Systems (IROS 2021) Online was held in Prague, Czech Republic, 27 September–1 October 2021 (see Figures 1 and 2). We were excited to host this flagship robotics conference in the country that introduced the word *robot* to the world exactly 100 years ago!

The entire robotics community was looking forward to an in-person meeting in Prague. Unfortunately, due to uncertainty in how the COVID-19 pandemic would develop and what kind of travel restrictions might be imposed, early in 2021 we made the painful decision to reshape the event to a fully online conference to ensure equal conditions for participants from all countries. To bring IROS 2021 as close as possible to an in-person meeting, we put an emphasis on interactive, live online sessions for all types of presentations (see Figures 3–7). In addition, each paper was accompanied by a 15-min prerecorded presentation, which was made available on the online conference platform gCon three weeks before the conference. The entire content of the online conference platform remains available for participants until the end of March 2022 at <http://iros2021.gcon.me>.

The live IROS program featured three plenary talks and 10 keynote talks, covering robot learning, optimi-

zation, nonlinear control, human–robot interaction, medical robotics, visual localization, navigation, planning, and so on. The technical sessions were organized into three blocks per

day, each comprising 20 parallel tracks. To facilitate live interaction for most of the attendees worldwide, we fit the program into a three-and-a-half-hour window at a time that was reasonable

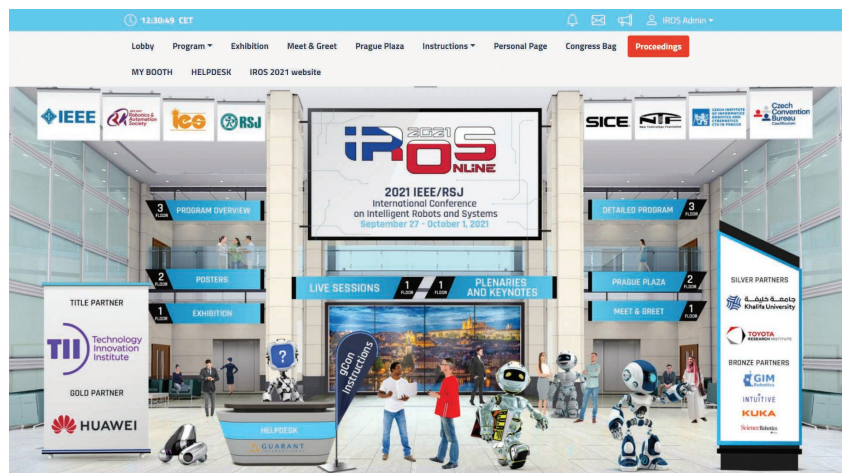


Figure 1. The IROS 2021 Online conference lobby.

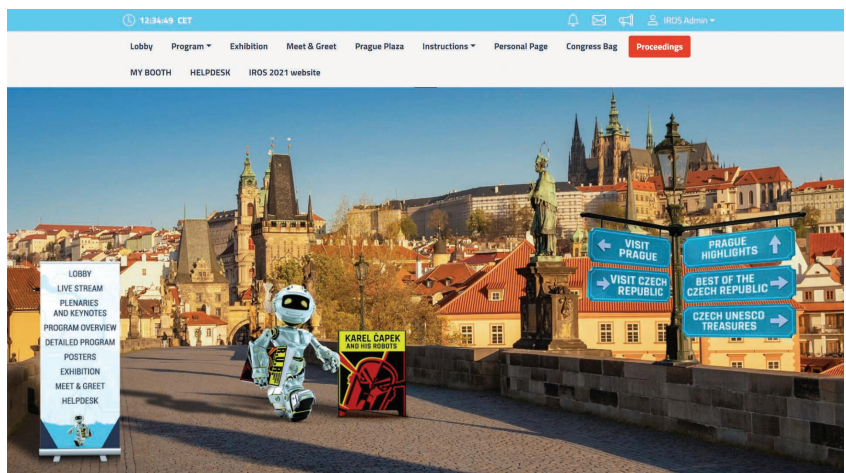
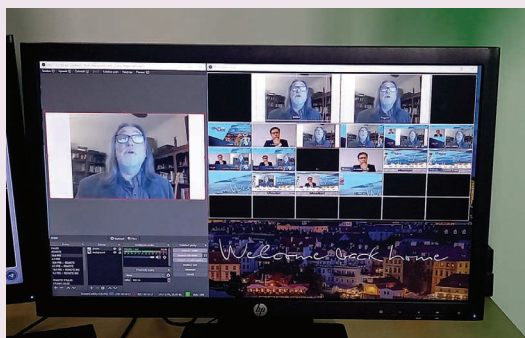
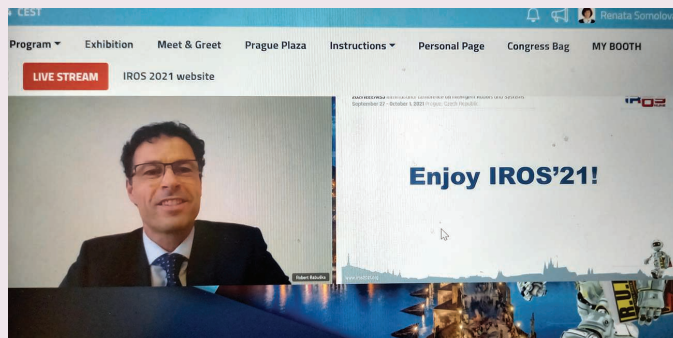


Figure 2. IROS 2021 featured virtual sightseeing opportunities, including the Prague Plaza.

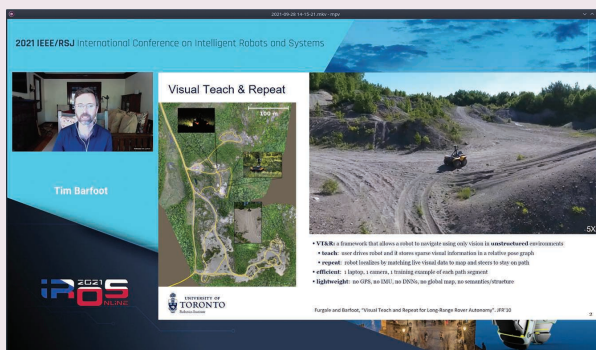


(a)



(b)

Figure 3. The opening session at IROS 2021, with remarks from (a) IEEE Robotics and Automation Society President Seth Hutchinson and (b) Program Chair Robert Babuska.



(a)



(b)

Figure 4. Two live talks presented at IROS 2021.

for participants across the most time zones. Each regular paper had a six-minute slot, consisting of a live spotlight talk followed by questions from the audience. This proved to be a suitable format for live discussions, which could continue after the session in breakout rooms where the audience could meet “in person” with each speaker of the session.

Following the IROS tradition, the event featured two additional workshop days—on the day just before and immediately after the main conference. The program presented 47 workshops, four tutorials, late-breaking results poster sessions, six forums, several competitions, exhibitions, and sponsorship programs.

IROS 2021 had an excellent attendance of 2,593 unique registered participants to the main conference days,

1,285 of whom also signed up for workshops. Additionally, 426 participants registered for the workshops only. The conference presented two

Best Paper Awards: Best Student Paper Award and Best Conference Paper Award, which were selected from 29 nominations. Furthermore, eight Best

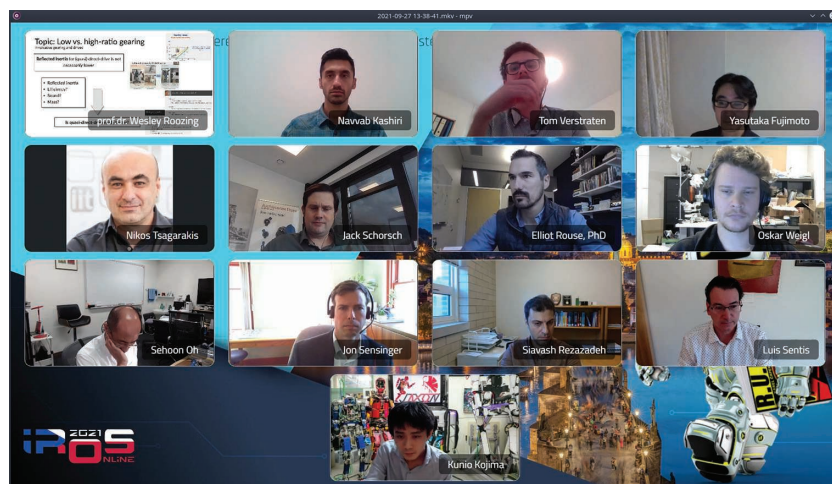


Figure 5. The live meeting rooms discussions at IROS 2021.

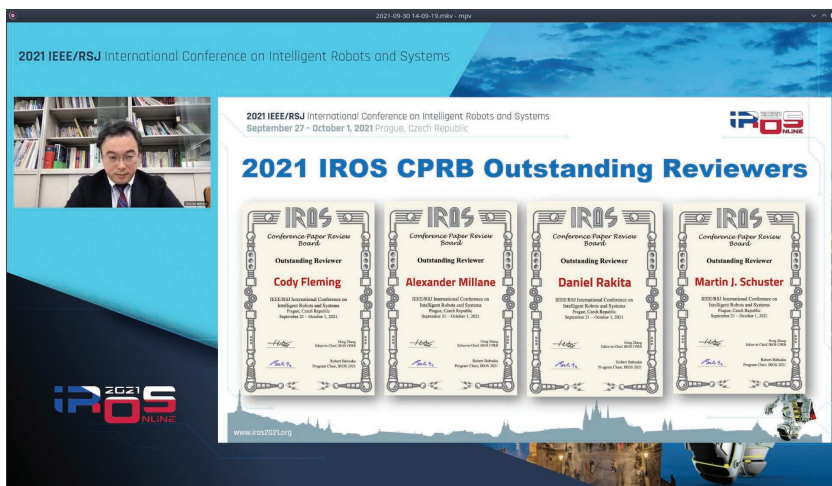


Figure 6. The awards ceremony at IROS 2021.

Technical Paper awards and IROS CPBR awards for outstanding services were conferred.

IROS 2021 received 2,821 paper submissions in total, comprising 2,160 IROS-only submissions, 626 submissions to *IEEE Robotics and Automation Letters* with IROS option, and 35 papers contributed by *IEEE Robotics and Automation Magazine* and *IEEE Transactions on Robotics*. After the review process, a total of 1,301 papers were selected for the IROS program.

We are grateful to the IROS 2021 Organizing Committee, the Senior

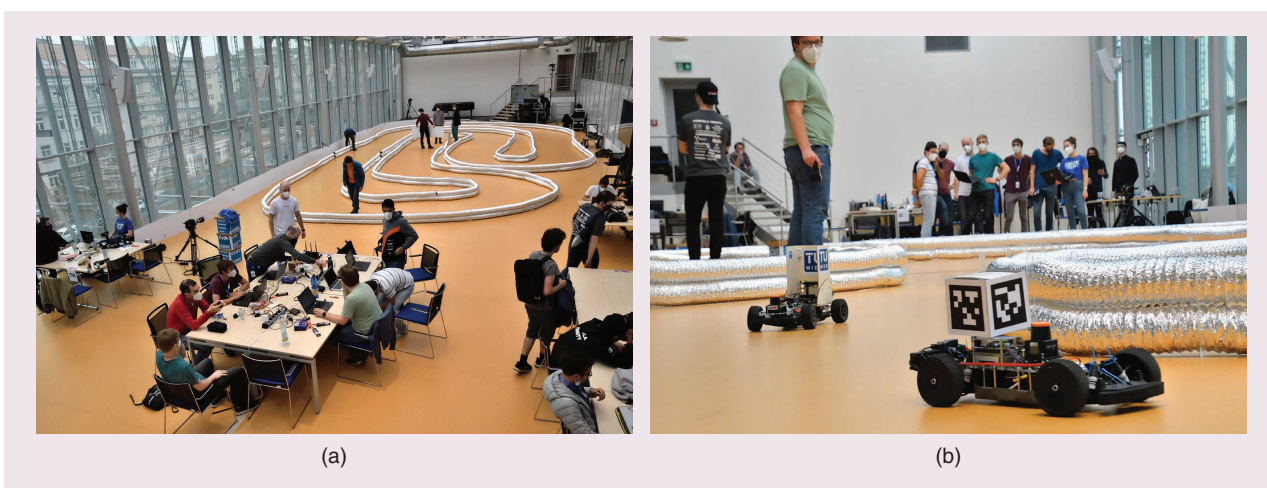


Figure 7. The Formula One competitions at CTU-CIRC in Prague, the only in-person portion of IROS 2021.



Figure 8. The livestream operators in action in the IROS 2021 control room.



Figure 9. The Local Organizing Committee during the closing session at IROS 2021.

Program Committee, and the IROS Steering Committee for their advice and hard work toward making IROS 2021 possible (see Figures 8 and 9). Finally, we thank all the authors, presenters, attendees, reviewers, and sponsors for their commitment to IROS 2021; for participating in the scientific discussion in the community; and for shaping the future of the robotics field. We look forward to IROS 2022 in Kyoto, Japan.

RAS Announces Its 2022–2023 President-Elect

Aude Billard will serve as the IEEE Robotics and Automation Society's (RAS's) president-elect for 2022–2023 (see Figure 1). At its 20 November 2021 meeting, the RAS Administrative Committee elected Billard to operate under President Frank Park before assuming the Society presidency in January 2024.

She is a full professor and head of the École Polytechnique Fédérale Lausanne (EPFL) LASA laboratory and was a faculty member at the University of Southern California. She received B.Sc. and M.Sc. degrees in physics from EPFL and a Ph.D. degree in artificial intelligence from



Figure 1. RAS President-Elect Aude Billard.

the University of Edinburgh. She is an ERC awardee and a recipient of the Intel Corporation Teaching Award, Swiss National Science Foundation CAREER Award, an Outstanding Young Person in Science

and Innovation award from the Swiss Chamber of Commerce, and IEEE-RAS Best Reviewer Award. She co-founded three start-ups and is a member of the Swiss Academy of Science Engineering and the Swiss Science Council. Her research spans the fields of machine learning and robotics. She has been published in more than 150 articles and has authored one MIT Press book. Her research has received best paper awards from the IEEE Transactions on Robotics, RSS, IEEE International Conference on Robotics and Automation, IEEE/Robotics Society of Japan International Conference on Intelligent Robots and Systems, Humanoids, and ROMAN and was featured in premier venues (BBC, IEEE Spectrum, and Wired).