

FUSION 2021 REPORT

REPORT ON THE 24TH INTERNATIONAL CONFERENCE ON INFORMATION FUSION

The International Society of Information Fusion (ISIF) hosted its 24th International Conference on Information Fusion at the Sun City Conference Centre in Rustenburg, South Africa from 1–4 November 2021.

The South African Local Organising Committee (LOC), in consideration of the effects of the COVID-19 pandemic and many international travel restrictions, hosted a “hybrid” conference. Attendees were given the option of attending online or onsite and were given the opportunity to change these options at short notice.

The conference was attended by 214 people, of whom a quarter attended onsite. The event featured 10 tutorials, a free collaborative workshop, 146 papers, and three keynote speakers, viewed by attendees from 30 countries. The tutorials were followed by the three-day technical programme. The programme included general and special sessions that were convened in five break-out rooms.

The social programme included an informal welcome dinner, a game drive, an outdoor Boma (BBQ) dinner, a fun-run, and gala dinner that were all hosted at the Sun City Conference Centre and the Pilanesberg National Park.

Coordinating four days of intense onsite activities and remote, real-time participation by means of Slack and Zoom was an immense logistical undertaking.

KEYNOTE SPEAKERS

We wish to thank our keynote speakers for their inspiring words in the run-up to each conference day’s proceedings. They brought to conference attendees an excellent addition of technical competence, experience, and passion for information fusion, in perspectives ranging from local and international academia and industry. This year’s keynote speakers were:

- ▶ Prof. Russ Taylor, the Square Kilometre Array (SKA) Research Chair in Radio Astronomy from the University of Cape Town and the University of the Western Cape, on “The SKA: Big Telescope, Big Science, Big Data”
- ▶ Prof. Simon Maskell, of the University of Liverpool, on “Particles 2.0: Non-linear Non-Gaussian Inference for 2021”
- ▶ Dr. Edward Tunstel, CTO of Motiv Space Systems, Inc., on “From Behavior Fusion to Memetics for Next-Level Robotic Intelligence”

TECHNICAL PROGRAMME

Regarding the technical aspects of the conference, an open call for papers was circulated, and conditions amid COVID lock-

downs the world over were challenging again. In spite of this, we were still able to attract a total of 211 paper submissions, of which 146 were accepted. This equates to an acceptance rate of 69%. (This is compared to 167 papers accepted out of 230 paper submissions in 2020, a 73% acceptance rate.) All presented papers appeared in the published proceedings that are accessible through IEEE Xplore. The conference proceedings publication was also Scopus indexed and can be downloaded from the conference website at <https://www.fusion2021.co.za/epc/> (password protected).

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A strict single-blind peer-review process on the full paper submission was applied with three or more reviewers from the relevant discipline per paper. We would particularly like to thank the Technical Chairs for coordinating the review process (the same team as in 2020), especially Lyudmila Mihaylova, Paulo Costa, Anne-Laure Jusselme, Zhansheng Duan, and Simon Godsill, the Program Chairs Erik Blasch and Kathryn Laskey, as well as the team of hundreds of volunteer reviewers drawn from across the international fusion community. Without their hard work and efficiency, we would not have been able to manage the review process and compile the programme. We thank Special Session Chairs Roy Streit and Joel Dabrowski, who assisted with the recruitment and selection of special sessions. Furthermore, we wish to thank the many colleagues from around the world who have helped to attract high-quality papers. Special Session papers were subject to the same review process as regular papers. A complete list of all special sessions can be found on the conference website at <https://www.fusion2021.co.za/>.

SOCIAL ACTIVITIES

In keeping with tradition, FUSION 2021 was hosted at a superb conference venue, the Sun City Convention Centre. Sun City is situated a mere 200 km from Johannesburg and borders on the Pilanesberg National Park. The Park covers 55,000 hectares and is the fourth largest National Park in Southern Africa. It is home to, among others, the big five animals of Af-



FUSION 2021 students at the informal welcome dinner, with drinks at the Luma Lounge and Deck.



Mr. Cedric du Mouza and Ms. Camelia Constantin, with their daughters.

rica. The Park, furthermore, is perched on the eroded vestiges of an alkaline volcanic crater, one of only three such craters in the world. Sun City also lies within this crater. The FUSION 2021 conference logo symbolised this crater in ancient rock art drawings style, of which many can be found in abundance in Southern Africa.

The FUSION 2021 LOC packed the social programme with the very best that was offered by Sun City and its surrounds. On Monday, 1 November, guests were hosted to an informal welcome dinner and drinks at the Luma Lounge and Deck of the Cascades Hotel, overlooking the lush green gardens of Sun City and the hills of the Pilanesberg National Park in the distance.

On Tuesday, 2 November, the agenda was scheduled to end earlier than usual to make provision for a three-hour Safari Game Drive in the Pilanesberg National Park in search of the big-five. Attendees were not disappointed as they spotted lion, leopard, buffalo, elephants, rhino, giraffes, and many antelope during the game drive. Following the game drive, attendees were treated to an outdoor Boma “Braai” (BBQ) dinner, including traditional South African delicacies under a gorgeously clear African night sky. Many stories were shared of the abundance of animals that had been “spotted” on the game drive.

At 06:30 on Wednesday, 3 November, many of the attendees arrived to participate in the traditional 5 km Fun Run. The run



Snapshot of the Gala Banquet, including Prof. Fredrik Gustafsson, Dr. Claire Laudy, Dr. Alta de Waal, Dr. Kathryn Laskey, Dr. Ali Raz, and Mrs. Hina Khalid.

followed a path along the lush Gary Player Golf Course. (Some of the participants may have completed the course faster than usual as a leopard had been spotted on this course the previous evening.) The winner of the 2021 Fun Run was Yunpeng Li with a time of 24:51, followed by Jonas Åsnes Sagild and Mauritz Kloppers.

The FUSION 2021 Gala Dinner took place in the Sun City Conference Centre Ballroom. Before dinner was served, an awards ceremony recognized some of ISIF’s greatest contributors. The night’s main attraction was a musical and theatre performance by traditional Gumboot Dancers. The evening was thoroughly enjoyed by all!

ORGANISATION

“This was the first onsite ISIF conference held on the African continent. The South African LOC compiled a programme, which included some of the premier South African experiences that could be accommodated in the four-day agenda: a five-star conference venue, a high standard of hospitality and an exceptional wildlife experience,” said General Co-Chair, Prof. Pieter de Villiers. The conference was originally scheduled to take place in July 2021, but was postponed to November 2021, with the hope of enabling ISIF members to attend the conference onsite.

“This was by far the most enjoyable conference I have ever attended. I think we might have a problem leaving the children at home when next we attend a conference, as they are under the impression that all conferences include this many exciting social events...”

Prof. Cedric du Mouza, Associate Professor, CNAM, France



FUSION 2021 attendees on the Game Drive.



Photo by Pieter de Villiers.



Photo by Keith LeGrand.



Photo by Keith LeGrand.



Photo by Keith LeGrand.



FUSION 2021 attendees on the Game Drive.

BUILDING ON PAST EXPERIENCES

In 2020, the South African LOC spent many hours considering and implementing solutions for the best possible online conference experience. All of us have attended past FUSION conferences, and our aim was to offer nothing less than an event of technical excellence.

In 2021, we decided to combine the finest of both conference formats—as we were able to offer an onsite and online attendance option—which equated to double the effort

required to host either format. The success of this event can be attributed to the continued support of a vibrant information community.

We wish to thank all of our committee members and other volunteers for their selfless contributions in time and expertise, and the assistance from past organisers whose input was truly invaluable to a successful FUSION 2021. We were thrilled to be able to host FUSION 2021 as a “hybrid” event as nothing could have replaced the social aspects of the on-site conference in combination with excellent online contributions.