



SOUTH AFRICAN COUNCIL FOR AUTOMATION AND CONTROL

SACAC President's Report

Good morning everyone and welcome to this annual general meeting of the South African Council of Automation and Control (SACAC).

In retrospect, 2024 was another remarkable year for the council, marked by the successful hosting of our flagship triennial conference, the Control Conference Africa (CCA). The third Control Conference Africa (CCA), held from 16 to 17 September 2024 at the Ravenala Attitude Hotel in Balaclava, Mauritius, further advanced the objectives of the South African Council for Automation and Control (SACAC), that is, to promote the discipline of automation and control within the African continent. This was achieved by bringing together researchers and practitioners from across the continent with their peers from other regions globally.

The realisation of this conference was the collective effort of the national organising committee (NOC), led by Laurentz Olivier as chair, Sayed Hassen as vice-chair, and Kevin Brooks as vice-chair for industry. Additionally, the international program committee (IPC), chaired by Denis Dochain, vice-chaired by Derik le Roux, and vice-chaired for industry by Lidia Auret, played a pivotal role in its successful execution.

Through their collective efforts, the NOC and IPC ensured that CCA achieved its ambitious goals, demonstrating the council's unwavering commitment to fostering innovation through collaboration within the automation and control industry.

The council diligently provided value to its members through a guest lecture series on practical experience applying automation and control, specifically focusing on postgraduate students. However, this initiative is equally valuable to our industry practitioners. To provide a glimpse into the topics presented last year, we had:

- "Estimating project benefits post-implementation" by Kevin Brooks
- "(Machine) Learning Cheetah Locomotion" by Amir Patel
- "The Need and History of Online Analysers within Minerals Processing" by Michael Halhead
- "Establishing and maintaining Advanced Process Controllers on minerals processing plants" by Ian Craig
- "How AI is transforming the workplace for metallurgists, process and control engineers" by Theo van Schalkwyk
- "Enhancing stability and efficiency in process plants through averaging level control" by Gustaf Gous
- "From computer vision to concentrator value: Robust and actionable froth and pulp analytics" by Bernard Coetzee & Lidia Auret
- "Perspectives on the use of LLM to innovate decision support for the process industry" by André Yamashita

We thank Derik le Roux for leading and organising this initiative.

The council hosted a high-quality workshop entitled the Exploratory Data Analysis Workshop. The Exploratory Data Analysis (EDA) Workshop, presented by Tobi Louw and Lidia Auret, focused on the initial stages of data analysis for industrial processes, as well as the practicalities of working with industrial data. We eagerly anticipate a repeat of the workshop during this year.

The council was honoured to host Professor Na (Lina) Li from Harvard University, who visited South Africa as an IFAC Distinguished Lecturer. Professor Li's lecture, entitled "Representation-based Control and Learning for Dynamical Systems," focused on advancing data-driven methodologies for controlling complex dynamical systems. Both the talks at the University of Pretoria and Stellenbosch University attracted a diverse audience of faculty, students, and professionals from industry. The talks were held in person at both locations to facilitate our members' easy access to this world-class content and serve as networking opportunities. The distinguished lecture was made possible by the IFAC Distinguished Lecturer program, which enables national member organisations such as SACAC to benefit from exceptional talent within the IFAC community.

The council also endeavoured to fortify its ties with other professional organisations, such as the South African Institute of Electrical Engineers (SAIEE), by concluding a memorandum of understanding (MoU) and initiating plans for a joint workshop this year. Furthermore, we are exploring opportunities to collaborate with the Society for Automation, Instrumentation, Mechatronics, and Computer Engineering (SAIMC) on mutually beneficial initiatives. Additionally, we are intensifying our collaboration with the Southern African Institute of Mining and Metallurgy (SAIMM), intending to host several joint webinars throughout 2025.

As part of our outreach initiatives, Professor Syamala Krishnannair coordinated the Girls in Control Workshop to inspire young minds to pursue careers in the STEM fields. For 2024, we received IFAC Activity Fund support to expand the activities beyond KwaZulu-Natal, a significant development for the Council.

The IFAC Activity Funding enabled Professor Krishnannair to host four girls in control workshops last year. Two workshops were held at the UNIZULU Science Centre in the Zululand region, another at the SCI-ENZA Science Centre in Pretoria, and the fourth at the Cape Town Science Centre. Each workshop engaged girls aged 9 to 13 from local primary schools, aiming to ignite their passion for STEM fields through inspiring interactions and hands-on activities. The sessions were enriched by motivational talks from esteemed figures in the field, including Ms. Sethabile Madolo, an engineer at Anglo American, Dr. Veronica Allen, an astronomer from the Netherlands, and Professor Na Li, a control engineer from Harvard University. Furthermore, female control engineers from South 32 contributed to the discussions, providing practical insights and inspiration. The IFAC Activity funding was also awarded for 2025, which will facilitate a similar reach for the program this year.

The council also seeks to enhance the value for its members by providing sponsorships that enable individuals from its member organisations to attend high-level conferences when they have contributed papers to IFAC or IFAC-co-sponsored events.

As South Africa's National Member Organisation (NMO) for IFAC, a global organisation that exclusively comprises of countries as members, we are proposing an expansion of support to individuals from our member organisations who have served on the SACAC Executive Committee (EXCO) for a minimum of one year. This proposal aims to facilitate their nomination to IFAC structures and provide partial travel assistance to enable them to attend the annual IFAC meetings. By

implementing this initiative, we seek to enhance South Africa's representation within the international organisation and ensure the promotion of South African interests.

As my tenure as President of SACAC concludes, I extend my sincere gratitude to the Executive Committee (EXCO), who served under my leadership during the years 2023 and 2024. Their unwavering dedication and invaluable contributions to our members have been instrumental in the organisation's success. I am honoured to have had the privilege of serving as President and express my deepest appreciation for your unwavering support over the past two years.

As the new President and EXCO are elected today, I extend my best wishes for their continued success in carrying on the exceptional work of the council. I am confident that they will continue to advance the organisation's objectives and ensure its continued growth and prosperity in the years to come.

Finally, I trust that you will find 2025 to be an enriching year filled with pertinent activities and invaluable networking opportunities, including access to world-class workshops and lectures.