

SAIMC INTERNATIONAL INSPIRE CONFERENCE 2026 - JOHANNESBURG, SOUTH AFRICA

Wednesday 14 October

Timings	Royal Clansman - SAIMC	Greenwell's Glory - RobMech	Mallard - PRASA
07:30 - 08:45	Arrival Registration Refreshments Networking Prepare presentations in venues		
08:45 - 08:55	Welcome by Nick Stead - Master of Ceremonies		
08:55 - 09:05	Introduction to the Conference Gerhard Greeff (Chair and COO)		
09:05 - 10:00	Keynote Speaker - Hubertus Breier - CTO/Board Member - LAPP Germany: 'Next Generation Innovation: Shaping Africa's Industrial Future'		
10:00-10:30	Morning Break		
	Session Chair: Nick Stead	Best Paper Award Evaluation - Chair: Riaan Stopforth	Mechatronics 1 - Chair: Willem Jordaan
10:30 - 10:50	'From Earth to Orbit: Digital Transformation Lessons from the Space Industry' Gerhard Hattingh MD - Digivisory	Best Paper Evaluation: Development and testing of a handheld, modular, mapping and data collection platform - Callen Fisher, Jean-Luc Muller	An Edge-Assisted Predictive Maintenance Framework for Consumer-Grade 3D Printers Using Vibration and Thermal Sensing - Kyle Changfoot, Kyla Burden
10:50 - 11:10		Best Paper Evaluation: Quantisation and Geometric Redundancy in Resource-Efficient Visual Localisation - Leroy Marewangapo, Willie Smit	Development of a low-cost rotating 2D LiDAR for close quarters mapping on mobile platforms - Callen Fisher, Z Wu, J Muller, BR Buchanan, MJ McDermott
11:10 - 11:30	'Small-Scale Plants. Large-Scale Intelligence. Infinite Impact' Kemp Maritz, 4Sight & Muvhusi Muger, Calcamite	Best Paper Evaluation: Shape-Sensing Tentacle: A Distributed Smart-Node Interface for Wearable Limb-Shape Sensing - Zander van der Watt, I J Thomson	Automated Self-Cleaning Enclosure for Vision Based Sensors - Callen Fisher, G Marais
11:30 - 11:50		Best Paper Evaluation: HSV-Based Machine Vision and Embedded Control for a Low-Cost Citrus Fruit Sorter - Timothy Moolman, Stefan van Aardt, Farouk Smith	Real-Time Nonlinear Model Predictive Control for Quadrupedal Locomotion without GPU Acceleration - R Muller, Callen Fisher
11:50 - 12:35	Panel discussion: Should Africa Prioritize AI Skills or Traditional Industrial Training		

12:35 - 13:30	Lunch Break		
	Session Chair: Nick Stead	Unmanned Vehicles 1 - Chair: Stefan van Aardt	Space - Chair: Arnold Pretorius
13:30 - 13:50	'The Journey toward autonomous manufacturing - digitise, stabilise, automate, autonomise' Yanesh Naidoo, Jendamark	Model Predictive Contouring Control for a Racing Quadrotor with a Suspended Payload - Christo Boshoff, Japie Engelbrecht	Africa2Moon: Functional Model Design - Michael Esterhuyse, Daniel Gouws, Nortier Geyer, Russouw Grobbelaar, Arno Barnard, Willem Jordaan
13:50 - 14:10		High-Fidelity System Identification of a Low-Cost Quadcopter Platform - Luke Richardson, Arnold Pretorius, Natasha Botha	Control system for in-orbit close-proximity docking with a dynamic target - Frederik Russouw Grobbelaar, Willem Jordaan
14:10 - 14:30	Feedback on attendance at ARC Global Conference - Mechelle v d Vywer, Barnes Group	Flight Parameter Optimisation for UAV LiDAR-Inertial SLAM Mapping in a Simulated Environment - Kyla Burden, Theo van Niekerk, Stephen Marais	Circular Loci as a Lens for Quantised Position-Space Ambiguity in Planar Imaging - Ethan West, Willie Smit
14:30 - 15:15	Guest Speaker - Prof Daniel Carruth - Mississippi State University, USA 'Autonomy In Complex Environments: Challenges for Ground Robots'		
15:15 - 15:45	Afternoon Break		
	Session Chair: Nick Stead	Mechatronics 2 - Chair: Arnold Pretorius	Bio-Engineering 1 - Chair: Ian Thomson
15:45 - 16:05	'Disruptive innovation facing the Petrochemical industry' John Phala - SAIMC	Portable Photovoltaic Charging for 36 V and 48 V E-Bike Micromobility Batteries - Kyle Prinsloo, Stefan van Aardt, Farouk Smith	Mechatronic Design and Embedded Sensory Feedback Architecture for a Tendon-Driven Myoelectric Prosthetic Hand - Ashraf Sheri, Andre Grobler, Enrico Taljaard
16:05 - 16:50	Panel discussion: Cybersecurity in Smart Factories: Are We Prepared for the Next Attack?		
16:50 - 17:00	Wrap up and close off for the day		
17:00 - 19:30	Networking Cocktail event - The Verandah		

Thursday 15 October			
	<i>Royal Clansman - SAIMC</i>	<i>Greenwell's Glory - RobMech</i>	<i>Mallard - PRASA</i>
07:30 - 08:15	Arrival Registration Refreshments Networking Prepare presentation in venues		
08:15 - 08:30	Welcome by Gerhard Greeff		
	Session Chair: Nick Stead	Control and Mapping - Chair: Kyla Burden	Pattern Recognition - Chair: Callen Fisher
08:30 - 08:50	KeyNote Speaker Dr Ananth Seshan, Director, MESA International CEO & Board Member 5G Automatika CIO 5G Energy Ltd, Canada 'Can AI Build Quality into the Product'	Quantum-Inspired Nonlinear Model Predictive Control via Quantum Singular Value Transformation for Autonomous Systems - Khotsofalang Nqhoaki, Terry Wilding	Gradient-based local traversability analysis using structured 3D distance data - John Dickens
08:50 - 09:10		Blind Counter-Steer Correction of Oversteer for Autonomous Wheeled Vehicles - Brandon Chetty, Willem Jordaan, Benjamin Evans	Enhancing Real-Time Voice Control of Mobile Robotics for varying African Accents - Jaco Verster , Natasha Botha
09:10 - 09:30	'Beyond Control Systems: The Rise of Physical AI in Industrial Operations' Vinesh Maharaj - NTTData	Design of a magnetic control system for SUNQube-1 - Jandre Frey, Willem Jordaan	Gameplay Pacing Analysis in 2D Handcrafted Games Using Hidden Markov Modelling and Player Behaviour Pattern Recognition - Beatrice van Eden, Natasha Botha, Stephen Marais
09:30 - 09:50		Zero-Shot Sim-to-Real Transfer of a Reinforcement Learning Policy for Autonomous - Nico Martin, JC Schoeman, Lijun Zhang	A Comparative Evaluation of Foundation and Task-Specific Segmentation Models for Industrial Visual Inspection - Beatrice van Eden, Estine Clasen, Joseph Sefara, Thobela Nyangiwe
09:50 - 10:10	'The Future has already started' Dilley Naidoo - RSPH	Guided Genetic Algorithm for Optimising Camera Placement in a Motion Capture System - Shannon Pitman, Arnold Pretorius	Constraint-Guided Hybrid Procedural Dungeon Generation Using CNN-Based Semantic Refinement - Beatrice van Eden, Natasha Botha
10:10 - 10:30		A Comparative Evaluation of Monocular Depth Estimation and Stereo Vision for Outdoor Mobile Robot Perception - Jakobus Murray Louw, Jaco Verster, John Dickens	Embedded Neural-Network Weed Detection and Precision Spraying for a Low-Cost Autonomous Lawn Robot - Heinz Janse van Rensburg, Stefan van Aardt, Farouk Smith
10:30 - 11:00	Morning Break		

	Session Chair: Nick Stead	Bio-Engineering 2 - Chair: Jared Padayachee	Unmanned Vehicles 2 - Chair: Japie Engelbrecht
11:00 - 11:20	AI-partnered open-source nonlinear MPC development' Pieter Steenekamp - Optam	Real-Time ESP32 Fuzzy Control for Prosthetic Knee Braking Using Kinematic Sensing - Lisa Venter, Andre Grobler, Ashraf Sheri	Cascaded Linear Model Predictive Control for Agile Quadcopter Trajectory Tracking - Tony Brian Ngugi Mwangi Mwangi, Arnold Pretorius, Edward Boje
11:20 - 11:40		Proprioceptive Terrain Classification for a Low-Cost Mechatronic Prosthetic Ankle Using Fuzzy Logic and Linear Discriminant Analysis - Andre Grobler, Ashraf Sheri, Charlie Roux	Closed-Loop Attitude Identification of an Unstable MicroUAV for Control Design - Mpilonhle Nxasana, Arnold Pretorius
11:40 - 12:00	EMC-Optimized One-Cable Solution for Drive-Systems' Maximilian Strathman Lapp Holdings	A Modular Adjustable Transradial Prosthetic Socket: Design, Suspension Performance, and Wrist Rotation Evaluation - Asanda Ngubane, Siyabonga Masiza, Riaan Stopforth, Kwenzekile Gwala, Sphakahle Mbokazi, Njabulo Mdlalose, Daniel Kirkman	Vision-Based Neural Network Path Planning for Autonomous Oil Spill Containment Using an Unmanned Surface Vehicle - Meredith van der Merwe, Stefan van Aardt, Farouk Smith
12:00 - 12:45	Panel discussion: Industry 4.0: Is Smart Manufacturing Leaving Africa Behind		

12:45 - 13:45	Lunch Break		
	Session Chair: Nick Stead	Bio-Engineering 3 - Chair: Andre Grobler	Mechatronics 3 - Chair: Murray Louw
13:45 - 14:05	Can constrained South Africa afford to invest in a smarter industrial future, or afford not to? An economic outlook in a world of disruption' Xhanti Payi - Inani Strategies	Towards Weight-Balancing Control for Hexapod Locomotion over Uneven Terrain - Daniël Alwyn Gouws, Japie Engelbrecht	Mechanical Feasibility of a Novel Modular Serial Robotic Platform - Zubair Suddoo, Willis de Ronde, John Dickens
14:05 - 14:25		Biomimicry of the human neck with a 3-RPS mechanism - Kehshalia Govender, Jared Padayachee, Mark Gilpin	Challenges facing Computer Scientists and Engineering Researchers in Resource-Constrained Countries - Eduardo Bayro-Corrochano, Riaan Stopforth, Jorge Kamlofsky, José Francisco Zelasco, Mahendra Gooroochurn, Shaniel Davrajh, Siyabonga Masiza
14:25 - 14:45	'Pneumatics or Electrics for modern design applications' Marcus Gericke - Festo	Motion and Machine Vision: Biomimicry Inspired by the Human Eye - Kirav Narain, Jared Padayachee, Mark Gilpin	Reproducible Edge-AI Waste Sorting on a Low-Cost Conveyor Platform: A Cyber-Physical System Approach - Vhugala Raphunga, Stefan van Aardt, Farouk Smith
14:45 - 15:05		Low-Cost Bio-Mechatronic Prosthetic Hand with sEMG Control and Vibrotactile Feedback - Obiora Michael Orjiako, Stefan van Aardt, Farouk Smith	
15:05 - 15:35	Afternoon Break		
	Session Chair: Gerhard Greeff		
15:35 - 16:15	'How secure are your third-parties holding all your data and should you care?' Terence Fogarty, Carbon Vector		
16:15 - 16:35	Review/Close - Gerhard Greeff		