

# SACAIR2022

Southern African Conference  
for Artificial Intelligence Research  
AI for Social Justice

STIAS, Stellenbosch (Hybrid)  
5 - 9 December 2022

## Wednesday, 7 December - Main Conference Day One

07:30 - 08:30 Registration | Tea & Coffee

08:30 - 08:45 Welcome by the Co-Chairs of the 2022 SACAIR Local Organising Committee

08:45 - 09:45 Keynote

TIME	PRESENTER	TITLE	AUTHORS
09:45 - 10:05	PHIL1	Does Counterfactual Reasoning Hold the Key to Artificial General Intelligence?	Vorster
10:05 - 10:25	PHIL2	Answerability, Accountability, and the Demands of Responsibility	Fabio Tollon
10:25 - 10:40	PHIL3	AI Ethics as Reasoning	Emma Ruttkamp-Bloem
10:40 - 10:55	PHIL4	Re-assessing Google as Epistemic Tool in the Age of Personalisation	Tanya de Villiers-Botha
10:55 - 11:00		Message from our Sponsors	
11:00 - 11:05		Session Wrap Up	

11:05 - 11:35 TEA

11:35 - 11:55	IS1	AI for Social Good: Sentiment Analysis to Detect Social Challenges in South Africa	Koena Ronny Mabokela and Tim Schlippe
11:55 - 12:15	IS2	A Model for Biometric Selection in Public Services Sector	Elisa Maeko and Dustin van der Haar
12:15 - 12:35	IS3	Technology days: An AI democratisation journey begins with a single step	Danie Smit, Sunet Eybers, Alta de Waal and Nhlanhla Sibanyoni
12:35 - 12:55	IS4	The Preparation of South African Companies for the Impact of Artificial Intelligence	Aurona Gerber and Tiaan Taljaard
12:55 - 13:10	IS5	Global To Local: South African Perspectives on AI Ethics Risks	Emile Ormond
13:10 - 13:15		Session Wrap Up	

13:15 - 14:15 LUNCH

## Wednesday, 7 December - Main Conference Day One (Continued)

14:15	- 14:30	IS6	AI Competencies for Competitive Advantage: A Systematic Literature Review	Jurgens De Bruin and Auroora Gerber
14:30	- 14:45	IS7	CDR and Best Practices in AI in Construction - Catalysts and key to sustainability in the Digital Era	Bianca Weber-Lewerenz
14:45	- 15:00	IS8	A process for embedding ethics into the Information Systems curriculum in South Africa	Johan Breytenbach, Yusuf Adams and Carolien van den Berg
15:00	- 15:05	<b>Session Wrap Up</b>		

15:05 - 15:35 **TEA**

15:35	- 15:50	SAI1	Model-based Defeasible Reasoning	Jaron Cohen, Carl Combrinck and Thomas Meyer
15:50	- 16:10	SAI2	Relevance in the computation of non-monotonic inferences	Jesse Heyninck and Thomas Meyer
16:10	- 16:30	SAI3	Defeasible Justification Using the KLM Framework	Steve Wang, Tommie Meyer and Deshen Moodley
16:30	- 16:45	AAI1	Anomaly Detection in Continuous Stirred Reactor (CSTR) Using Deep Learning	Shikar Rajcomar, Edgar Jembere and Anban Pillay
16:45	- 17:00	AAI2	Learning to Pay Multiple Attention with Fully Convolutional Transformers	Samuel Oforu Mensah, Bubacarr Bah and Willie Brink
17:00	- 17:15	AAI3	Applying Route Optimisation to Fair Rota Generation for Home-Help Services	Naomi Davidson and Richard Booth
17:15	- 17:20	<b>Session Wrap Up</b>		

18:30

CONFERENCE DINNER AT WATERFORD WINE ESTATE

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## Thursday, 8 December - Main Conference Day Two

07:30 - 08:30 Registration | Tea & Coffee

08:30 - 09:30 **Keynote**

09:30 - 09:50 DDAI1 Fine-tuned Self-Supervised Speech Representations for Language Diarization in Multilingual Code-Switched Speech Geoffrey Frost, Emily Morris, Joshua Jansen van Vuren and Thomas Niesler

09:50 - 10:10 DDAI2 TransFusion: Transcribing Speech with Multinomial Diffusion Matthew Baas, Kevin Eloff and Herman Kamper

10:10 - 10:30 DDAI3 Spatial-Temporal Graph Neural Networks For Weather Prediction in South Africa Mikhail Davidson and Deshendran Moodley

10:30 - 10:45 DDAI4 Breast Cancer Molecular subtyping using Deep learning and multi-omics dataset Dassen Sathan and Shakuntala Baichoo

10:45 - 11:00 Message from our Sponsors

11:00 - 11:15 Session Wrap Up

11:15 - 11:45 **TEA**

11:45 - 12:00 DDAI5 Exploring the effectiveness of surrogate-assisted evolutionary algorithms on the batch processing problem Mohamed Variawa, Terence Van Zyl and Matthew Woolway

12:00 - 12:15 DDAI6 Comparing Synthetic Tabular Data Generation Between a Probabilistic Model and a Deep Learning Model for Education Use Cases Herkulaas Combrink, Vukosi Marivate and Benjamin Rosman

12:15 - 12:35 TML1 Jacobian norm regularisation and conditioning in neural ODEs Shane Josias and Willie Brink

12:35 - 12:55 TML2 Cauchy Loss Function: Robustness Under Gaussian and Cauchy Noise Thamsanqa Mlotshwa, Heinrich van Deventer and Anna Sergeevna Bosman

12:55 - 13:15 TML3 The missing margin: How sample corruption affects distance to the boundary measurements in ANNs Martinus Wilhelmus Theunissen, Coenraad Mouton and Marelle Davel

13:15 - 13:20 Session Wrap Up

## Thursday, 8 December - Main Conference Day Two (Continued)

13:20 - 14:20 **LUNCH**

14:20	- 14:40	AML1	Neural speech recognition for whale call detection	Edrich Fourie, Marelie Davel and Jaco Versfeld
14:40	- 15:00	AML2	Multi-Modal Recommendation System with Auxiliary Information	Mufhumudzi Muthivhi, Terence L van Zyl and Hairong Wang
15:00	- 15:20	AML3	Evaluating Automated and Hybrid Neural Disambiguation for African Historical Named Entities	Jarryd Dunn and Hussein Suleman
15:20	- 15:40	AML4	Real Time In-Game Playstyle Classification Using A Hybrid Probabilistic Supervised Learning Approach	Lindsay John Arendse, Branden Ingram and Benjamin Rosman
15:40	- 15:45		Session Wrap Up	

15:45 - 16:15 **TEA**

16:15	- 16:35	AML5	Self-Supervised Text Style Transfer with Rationale Prediction and Pretrained Transformers	Neil Sinclair and Jan Buys
16:35	- 16:55	AML6	Towards a methodology for addressing missingness in datasets, with an application to demographic health datasets	Gift Khangamwa, Terence van Zyl and Clint van Alten
16:55	- 17:15	AML7	From GNNs to Sparse Transformers: Graph-based architectures for Multi-hop Question Answering	Shane Acton and Jan Buys
17:15	- 17:25		Session Wrap Up	

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## Friday, 9 December - Main Conference Day Three

07:30 - 08:30 Registration | Tea & Coffee

08:30 - 09:30 **Keynote**

09:30	- 09:50	AML8	CASA: Cricket Action Similarity Assessment in video footage using deep metric learning	Tevin Moodley and Dustin Van Der Haar
09:50	- 10:10	AML9	Improving Cause-of-Death Classification from Verbal Autopsy Reports	Thokozile Manaka, Terence Van Zyl and Deepak Kar
10:10	- 10:30	AML10	Adversarial Training for Channel State Information Estimation in LTE Multi-Antenna Systems	Andrew Oosthuizen, Albert Helberg and Marelle Davel
10:30	- 10:50	AML11	Adaptive Reasoning: An Affect Related Feedback Approach for Enhanced E-learning	Christine Asaju and Hima Vadapalli
10:50	- 11:10	AML12	Content-based medical image retrieval using a class similarity-aware cross-entropy loss	Anicet Hounkanrin, Paul Amayo and Fred Nicolls

11:10 - 11:15 **Session Wrap Up**

11:15 - 11:20 **Message from our Sponsors**

11:20 - 11:35 **TEA**

11:35	- 11:50	AML13	How Machine Learning Can Aid South African Farmers' Security: Unsupervised Livestock Trajectory Embeddings	Urs de Swardt and Herman Kamper
11:50	- 12:05	AML14	Afrikaans Text Embeddings for Sequence Labelling with Deep Neural Networks	Roald Eiselen
12:05	- 12:20	AML15	Statistics and Deep Learning-based Hybrid Model for Interpretable Anomaly Detection	Thabang Mathonsi and Terence Van Zyl
12:20	- 12:35	AML16	Volatility forecasting using Deep Learning and sentiment analysis	Vuyo Ncume, Terence van Zyl and Andrew Paskaramoorthy
12:35	- 12:50	AML17	Public Parking spot Detection And Geo-localization Using Transfer Learning	Moseli Mots'Oehli and Yao Chao Yang

12:50 - 13:25 **Conference Closing & Announcement of SACAIR2023**

13:25 - 14:25 **LUNCH**