DEEP LEARNING INDABAX SOUTH AFRICA 2023



Deep Learning Indaba X South Africa 2023

12 - 14 JULY 2023

Kramer Building,
University of Cape Town,
Cape Town, South Africa

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ABOUT US

The Deep Learning IndabaX is a locally-organised meeting that helps ensure that knowledge and capacity in machine learning are spread more widely across the continent. The IndabaX is a means with which to experiment with the ways in which we strengthen African machine learning and its local communities, allowing more people to contribute to the conversation around machine learning and artificial intelligence. IndabaX events are local versions of the Deep Learning Indaba, which will be held this year in Accra, Ghana.

LIST OF ORGANISERS

Anna Bosman
Christopher Currin
Maria Schuld
Lydia de Lange
Thapelo Sindane
Nandi Mwase
Chris Fourie
Aldrin Ngorima
Callum Rhys Tilbury
Dinorego Bauba Mphogo
Guillaume Odendaal
Nompilo Mkhulisi
Avashlin Moodley
Leo Hyams
Laing Lourens
Joel Leonard
Avashna Govender
Tharien Potgieter
Thapelo Maupa
Maryam Mohamad Al Mahdi
Nomonde Khalo
Yeshalen Naicker
Nilesh Jain
Matimba Shingange
Claude Formanek
Ruan de Kock

VENUE INFO

All talks take place at the **Kramer Building, University of Cape Town**:
Kramer Law Building, Wilfred and Jules Middle Campus of South Africa, Rondebosch, Cape Town, 7700

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TRACKS

KEYNOTE

FOUNDATIONS

RESEARCH

APPLIED ML & INDUSTRY

POSTER SESSION

HACKATHON

WORKSHOPS

PANEL: AI & AFRICA

OVERVIEW

	11/07 TUESDAY	12/07 WEDNESDAY	13/07 THURSDAY	14/07 FRIDAY
8:00 am	Arrivals	Morning Coffee	Morning Coffee	Morning Coffee
8:30 am		Opening Remarks		
9:00 am				
9:30 am				
10:00 am		Break	Break	Break
10:30 am				
11:00 am				
11:30 am				
12:00 pm		Lunch	Lunch	Lunch
12:30 pm				
1:00 pm	Registration			Women in Tech Workshop / AI Safety Workshop / ML in Healthcare Workshop
1:30 pm				
2:00 pm		Break	Break	
2:30 pm				
3:00 pm				
3:30 pm				Break
4:00 pm		Group Photo & Speed Dating	Break	*Panel:* AI & Africa - A New Day or a Painful Replay?
4:30 pm				
5:00 pm		*Opening Event:* AI Fest & Poster session		Hackathon Prizes and Closing
5:30 pm				Travel
6:00 pm			Hackathon with Fruitpunch & Zindi	InstaDeep Movie Night
to late				

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DAY 0

Tuesday, 11 July

ATTENDEE REGISTRATION — **13h00 - 15h30**
Kramer Building, University of Cape Town

DAY 1 (Morning)

Wednesday, 12 July

MORNING COFFEE — **08h00 – 08h25**

OPENING REMARKS — **08h30 - 09h00**

KEYNOTE — **LT1**

Paul Amayo - Building Intelligence for Robots in Africa — **09h00 - 10h00**

TEA/COFFEE BREAK — **10h00 – 10h25**

FOUNDATIONS — **LT1**

Daniel N, Wike - Decoding Data Science to Encode Concepts — **10h30 - 12h00**

RESEARCH — **LT2**

Aurora Geber - The Digital-first World — **10h30 - 11h00**

Isaac Itumeleng Setshedi - Unveiling Hidden Parameters: Transforming the Classic Solve for X Problem to Data Driven Interpretable Latent Parameters — **11h00 - 11h30**

Deshen Moodley - Embracing Human-Centred Artificial Intelligence: The Rise of Augmented AI Systems — **11h30 - 12h00**

APPLIED ML & INDUSTRY — **LT3**

Jacques Ludik - Pushing AI Innovation to Develop Trustworthy Explainable AI, AGI and Autonomous Intelligent Agents in a Decentralised World — **10h30 - 11h00**

Stephanie Muller & Gemma Dawson - What's Next at IBM Research & IBM Quantum? — **11h00 - 11h30**

Gabi Immelman - Minds and Machines: The Most Powerful Technology in the Classroom? — **11h30 - 12h00**

LUNCH — **12h00 – 12h55**

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DAY 1 (Afternoon)

Wednesday, 12 July

KEYNOTE		**LT1**
Kshitij Thorat - Translating Astronomical Big Data into Patterns of Discovery		**13h00 - 14h00**
TEA/COFFEE BREAK		**14h00 – 14h25**
FOUNDATIONS		**LT1**
Ruan van der Merwe - Paying Attention to Transformers: A Deep Dive into Transformer Networks		**14h30 - 16h00**
RESEARCH		**LT2**
St John Grimbly - Neuro-Symbolic Intro to Causality		**14h30 - 15h00**
Emile-Reyn Engelbrecht - Semi-Supervised Learning and Novelty Detection Using GANs		**15h00 - 15h30**
Cassandra Durr - Contrastive Learning Fundamentals and Practical Applications		**15h30 - 16h00**
APPLIED ML & INDUSTRY		**LT3**
Sedinam Simpson - A Day in Life of a Data Scientist		**14h30 - 15h00**
Karen Viljoen - Data Plumbing 101		**15h00 - 15h30**
Dineo Makoro - How a Line Graph can Ruin Your Day		**15h30 - 16h00**
GROUP PHOTO & SPEED DATING		**16h00 - 17h00 Outside**
OPENING EVENT: AI FEST & POSTER SESSION		**17h00 – 20h30 Kramer Quad**

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DAY 2 (Morning)

Thursday, 13 July

MORNING COFFEE	**08h00 – 08h55**

KEYNOTE — **LT1**

Jay van Zyl - The Human Organism as an Algorithm	**09h00 - 10h00**

TEA/COFFEE BREAK	**10h00 – 10h25**

FOUNDATIONS — **LT1**

Ritesh Kanjee - Mastering Modern Computer Vision Workshop From Basics to Cutting-Edge Technologies	**10h30 - 12h00**

RESEARCH — **LT2**

Herman Kamper - What can Large Spoken Language Models Tell Us About Speech?	**10h30 - 11h00**
Matthew Baas - Voice Conversion With Just Nearest Neighbours	**11h00 - 11h30**
Leanne Nortje - Visually Grounded Few-Shot Word Learning in Low-Resource Settings	**11h30 - 12h00**

APPLIED ML & INDUSTRY — **LT3**

Alta de Waal - AI Use Cases in BMW Group South Africa	**10h30 - 11h00**
Dr Frank Ortmann - MLOps in Enterprise	**11h00 - 11h30**
Shane Action - Natural Language AI is Revolutionising Medical Science	**11h30 - 12h00**

LUNCH	**12h00 – 12h55**

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DAY 2 (Afternoon)

Thursday, 13 July

KEYNOTE — **LT1**

Emma Ruttkamp-Bloem - AI and Agency — **13h00 - 14h00**

TEA/COFFEE BREAK — **14h00 – 14h25**

FOUNDATIONS — **LT1**

Jacobie Mouton - An Introduction to Variational Inference and its Application in Deep Learning — **14h30 - 16h00**

RESEARCH — **LT2**

Mervyn Christoffels - High Performance Computing — **14h30 - 15h00**

Joseph Muthui Wacira - Advances in Machine Learning for Renewable Energy — **15h00 - 15h30**

Aby Louw - Text-to-Speech for African language (Resource-Scarce) — **15h30 - 16h00**

APPLIED ML & INDUSTRY — **LT3**

Keegan White - Smart Networks - the Power of Machine Learning Controlled Computer Networks — **14h30 - 15h00**

Thomas Gwasira - Reading the Air: Deep Learning in Radar, Communications and Acoustic Signal Processing — **15h00 - 15h30**

Mahmood-Ali Parker - Liveness Detection: Defending Against the Emerging Threat of Deepfakes — **15h30 - 16h00**

TEA/COFFEE BREAK — **16h00 – 16h25**

FOUNDATIONS — **LT1**

Asad Jeewa - Reinforcement Learning — **16h30 - 18h00**

LIGHTNING TALKS — **LT2**

16h30 - 18h00

HACKATHON PREPARATION — **LT3**

Mehrdad Ghaziasgar - An Unconvoluted Introduction to CNNs — **16h30 - 18h00**

HACKATHON WITH FRUITPUNCH & ZINDI — **18h00 – 00h00**
New Lecture Theatre
Upper Campus

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DAY 3 (Morning)

Friday, 14 July

MORNING COFFEE	**08h00 – 08h55**
KEYNOTE — LT1	
John Kamara - The AI Opportunity for Africa	**09h00 - 10h00**
TEA/COFFEE BREAK	**10h00 – 10h25**
FOUNDATIONS — LT1	
Kevin Eloff - Denoising Diffusion Models: Introduction and Applications	**10h30 - 12h00**
RESEARCH — LT2	
Sasha Abramowitz - Beyond Python: How Julia can Accelerate your Reinforcement Learning Projects	**10h30 – 11h00**
Batsi Ziki - Curiosity: The Compass that Leads to Intrinsic Motivation	**11h00 – 11h30**
Divanisha Patel - Reinforcement Learning and its Applications to Real World Problems	**11h30 – 12h00**
APPLIED ML & INDUSTRY — LT3	
Dr Eileen Izette Carter - RightsTech Balancing Innovation and Human Rights in the Age of Deep Learning	**10h30 - 11h00**
Chijioke Okorie - Navigating Legal and Licensing Landscape for Machine Learning Applications	**11h00 - 11h30**
Roger Carthew - How People Power your Business	**11h30 - 12h00**
LUNCH	**12h00 – 12h55**

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DAY 3 (Afternoon)

Friday, 14 July

WORKSHOPS **13h00 – 15h30**
WOMEN IN TECH **LT1**

Thenjiwe Kubheka - Developmental Opportunities for Women within the Technology Sector
Andrea Bohmert - Control Your Own Destiny
Mmaki Jantjies - Intentional Career development in the Field of AI
Panel discussion
Breakout sessions

AI SAFETY AND GOVERNANCE **LT2**

Jonas Kgomo - A Guided Walkthrough of the African Safety Landscape
Zainab Taonga Chirwa - Perspectives on AI Governance in Africa
Benjamin Sturgeon - An Introduction to AI Safety

ML IN HEALTHCARE **LT3**

Dr Oluwasegun Julius Aroba - Uncovering the Emergence of AI in Healthcare Industries in the 21st Century
Ayogeboh Epizitone - AI Applications in Healthcare
Siphiwe Thwala - Biomedical Text Insights Extraction
Kayode Adetunji - Using Deep Learning to Predict CVD Multimorbidity in Africa: A Guide to Navigate the Dark Abyss
Junior Muka - Improving Data Quality using Machine Learning
Panel discussion

TEA/COFFEE BREAK **15h30 – 15h55**

PANEL DISCUSSION **LT1**
AI & Africa: A New Day or a Painful Replay? **16h00 – 17h00**
Panelists: Sandras Phiri, Zara Schroeder, Mark Gaffley, Thapelo Nthite
Host: Callum Tilbury

CLOSING CEREMONY **17h00 - 17h30**

Prize Giving for Posters & Hackathon

TRAVEL TO TOWN **17h30 - 18h00**

CLOSING EVENT
InstaDeep Movie Night **18h00 – 20h30** The Labia Theatre
and/or
Explore Town **18h00 – 23h00** Kloof Street

TRAVEL TO RESIDENCES **23h00**

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PARTNERS

DEEP LEARNING INDABA

University of Cape Town • iYunivesithi yaseKapa • Universiteit van Kaapstad

InstaDeep™

LELAPA AI

ai MEDIA

cair CENTRE FOR ARTIFICIAL INTELLIGENCE RESEARCH

FruitPunch AI

IBM

AI EXPO AFRICA 2023 BUILDING AN AI-POWERED FUTURE FOR AFRICA

NITheCS National Institute for Theoretical and Computational Sciences

ZINDI

MaSS DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL & STATISTICAL SCIENCES

SOUTH AFRICAN ARTIFICIAL INTELLIGENCE ASSOCIATION SAAIA THE AI OPPORTUNITY OF TOMORROW, TODAY

BUTLER'S PIZZA!

NICIS NATIONAL INTEGRATED CYBERINFRASTRUCTURE SYSTEM CHPC

adanian LABS

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

imbizo / ɪmˈbiːzə / (Xhosa): A gathering to share knowledge

SISONKE BIOTIK

ICE Artificial Intelligence Center of Excellence Africa

CSIR Touching lives through innovation

UNIVERSITY OF CAPE TOWN IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

AIMS African Institute for Mathematical Sciences SOUTH AFRICA

ISTA Institute of Science and Technology Austria

Tshwane University of Technology

UNIVERSITY OF KWAZULU-NATAL

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DUT DURBAN UNIVERSITY OF TECHNOLOGY INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

