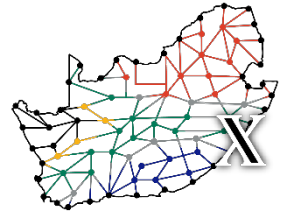# DEEP LEARNING INDABAX
SOUTH AFRICA 2019

14 – 17 APRIL 2019

UNITE Building
University of KwaZulu–Natal
Durban

DEEP LEARNING INDABAX SOUTH AFRICA 2019

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 Nairobi, Kenya.

LIST OF ORGANISERS

AMIRA ABBAS
University of KwaZulu-Natal

CHRISTOPHER CURRIN
University of Cape Town

ANBAN PILLAY
University of KwaZulu-Natal

JAMES ALLINGHAM
Wolfram Research

STEVEN JAMES
University of the Witwatersrand

MARIA SCHULD
University of KwaZulu-Natal

ANNIKA BRUNDYN
University of Cape Town

SASHA NAIDOO
Nedbank

SICELUKWANDA ZWANE
University of the Witwatersrand

ALEX CONWAY
NumberBoost

ANDREW PASKARAMOORTHY
University of the Witwatersrand

VENUE INFO

All talks take place at the UNITE Building, University of KwaZulu-Natal. The discussion, keynote and research talks take place in the Lecture Theatre. Foundation talks occur in Rooms 4 and 5, and industry, ethics and policy talks take place in Rooms 1, 2 and 3. The opening event will take place at the PYC Yacht Club, 3 Maritime Pl, Harbour, Durban.

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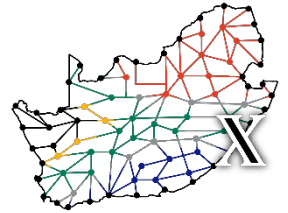
TRACKS

KEYNOTE

RESEARCH

HACKATHON

FOUNDATIONS

INDUSTRY, ETHICS & POLICY

UNCONFERENCE

OVERVIEW

	14 April SUNDAY	15 April MONDAY	16 April TUESDAY	17 April WEDNESDAY
08h30		Opening Remarks (15 mins)		
09h00				
09h30		Discussion: Africa in AI		
10h00				
10h30		Tea Break	Tea Break	
11h00				
11h30				
12h00				
12h30				
13h00		Lunch	Lunch	
13h30				
14h00				
14h30				
15h00	Registration			Prizegiving and Closing
15h30		Tea Break	Tea Break	
16h00				
16h30				
17h00				
17h30				
18h00	Opening Event	Poster Session		
18h30				
19h00				
19h30				
20h00				

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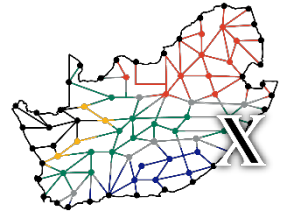
DAY 0
Sunday, 14 April

ATTENDEE REGISTRATION
UNITE Building, University of KwaZulu-Natal

15h00 - 18h00

OPENING EVENT
PYC Yacht Club, 3 Maritime Place, Harbour, Durban

18h00 - 22h00

DAY 1
Monday, 15 April

OPENING REMARKS

08h30 - 08h45

OPENING DISCUSSION: AFRICA IN AI

Tshilidzi Marwala, Benjamin Rosman, Justine Nasejje, Pelonomi Moiloa, Jade Abbott, Sicelukwanda Zwane & Chris Currin

08h45 - 10h30

TEA BREAK

10h30 - 11h00

KEYNOTE I

Tshilidzi Marwala: On Rationality of Artificial Intelligent Machines

11h00 - 13h00

LUNCH

13h00 - 14h00

FOUNDATIONS I

Kerryn Gammie: Animated Intro to Machine Learning

14h00 - 15h30

RESEARCH I

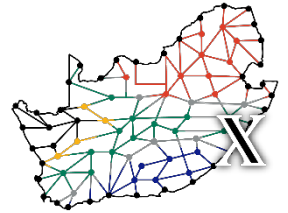*Ndivhuwo Makondo:* Machine Learning For Robot Control

14h00 - 14h30

Ashley Gritzman: Will Capsule Networks Replace CNNs?

14h30 - 15h00

Terence van Zyl: Random Neural Networks

15h00 - 15h30

DEEP LEARNING INDABAX SOUTH AFRICA 2019

INDUSTRY, ETHICS & POLICY I

Nick Bradshaw: Community Development as an Avenue to Career Growth	**14h00 - 14h20**
Alex Conway: Deep Neural Networks for Video Applications	**14h20 - 15h00**
Jade Abbott: Machine Learning in Real Life	**15h00 - 15h30**

TEA BREAK

	15h30 - 16h00

FOUNDATIONS II

Richard Klein: Introduction to Deep Learning	**16h00 - 17h30**

RESEARCH II

|	
Emlli-Mari Nel: Ticker: An Adaptive Single-Switch Text Entry Method for Visually Impaired Users	**16h00 - 16h30**
Sebastian Bodenstein & Taliesin Beynon: Deep Learning Vs The Brain	**16h30 - 17h00**
James Allingham: Missing Data Imputation	**17h00 - 17h30**

INDUSTRY, ETHICS & POLICY II

Nick Pentreath: The IBM Developer Model Asset Exchange – Deep Learning For Everyone	**16h00 - 16h30**
Stuart Reid: The Temporal Turing Test: Sampling Real-Valued Multivariate Time Series from Deep Generative Models	**16h30 - 17h00**
Jan Krynauw & Zander Lee: Humans in the Loop – New Ways of Working in a Deep Learning World	**17h00 - 17h30**

POSTER SESSION

Hosted in the Foyer. Snacks and drinks provided	**17h30- 20h00**

DEEP LEARNING INDABAX SOUTH AFRICA 2019
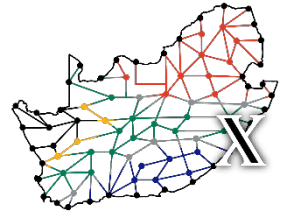
DAY 2

Tuesday, 16 April

KEYNOTE II

Andrew Saxe: High-Dimensional Dynamics of Generalization Error in Neural Networks: Insights from the Linear Case

08h30 - 10h30

TEA BREAK

10h30 - 11h00

FOUNDATIONS III

Wiebke Toussaint: Unsupervised Machine Learning 101

11h00 - 12h00

Edgar Jembere: Introduction to Natural Language Processing

12h00 - 13h00

RESEARCH III

Justine Nasejje: Using Conditional Inference Forests to Model Time to Event Data

11h00 - 11h30

Willie Brink: Visual-Semantic Embeddings: An Introduction and Applications

11h30 - 12h15

Benjamin Rosman: Exploiting Structure for Accelerating Reinforcement Learning

12h15 - 13h00

INDUSTRY, ETHICS & POLICY III

Jacques Ludik: Digital Transformation Journey in Operationalizing AI Solutions to Help Businesses Thrive in the Smart Technology Era

11h00 - 11h30

Quentin Williams: AI + Humans in Business: Progeny or Friendship

11h30 - 12h00

Pelonomi Moiloa: Protecting Machines from us – Ethics and Bias

12h00 - 12h30

Matthew Adendorff: Civic Technology and AI – Meaningful Opportunities and Daunting Biases
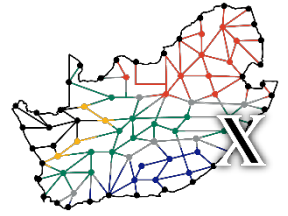
12h30 - 13h00

LUNCH

13h00 - 14h00

FOUNDATIONS IV

Jonathan Shock: A Guided Tour through the Landscape of Reinforcement Learning

14h00 - 15h30

DEEP LEARNING INDABAX SOUTH AFRICA 2019

RESEARCH IV

Christopher Clegghorn: Black-Box Optimization and its Role in Machine Learning — **14h00 - 14h45**

Maria Schuld: Machine Learning with Quantum Computers — **14h45 - 15h30**

INDUSTRY, ETHICS & POLICY IV

Centre for High Performance Computing: TBA — **14h00 - 14h30**

Michelle Hoogenhout: Growing young talent: Selecting and training the next generation of data scientists — **14h30 - 15h00**

Dario Fannucchi: A Tour of Machine Learning in the African Business Context: 5 Years of Awesome Ideas, Dramatic Flops and Big Wins — **15h00 - 15h30**

TEA BREAK — **15h30 - 16h00**

KEYNOTE III

Bruce Bassett: An AI Play in 3 Parts: Jacuzzis, Research and AGI — **16h00 - 17h30**

HACKATHON OPENING

Hosted in the Lecture Theatre and LAN until 01h00 — **17h30 - Onward**

DAY 3 — *Wednesday, 17 April*

HACKATHON CONTINUES

Hosted in the LAN and Rooms 1, 2 and 3 — **08h30 - 15h00**

UNCONFERENCE
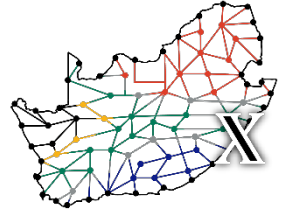
Hosted in the Lecture Theatre and Rooms 1, 2 and 3 — **08h30 - 15h00**

PRIZE-GIVING AND CLOSING REMARKS

Poster winner and hackathon prizes announced — **15h00 - 15h30**

DEEP LEARNING INDABAX
SOUTH AFRICA 2019

DEEP LEARNING
INDABA

UNIVERSITY OF
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YAKWAZULU-NATALI

NRF
National
Research
Foundation

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

STANLIB

cortex logic
The AI Engine for Business

alis_
AI Driven Investments

NITheP
National Institute for
Theoretical Physics

CAPITEC

IBM

krisp

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interactive
SOLUTIONS

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we build custom A.I. solutions

psybergate
Software. Solutions. Skills.

XINESH

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SCIENCE

dataprophet
machine learning specialists

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A

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PERFORMANCE COMPUTING

CRC
CENTER FOR RESEARCH COMPUTING

ECK INSTITUTE FOR
GLOBAL
HEALTH

Machine Intelligence Institute of Africa
Transform Africa through Machine Intelligence