Research Excellence and Impact in African Artificial Intelligence

The 2nd Kambule and Maathai Awards 2019

July 2019

DEEP LEARNING INDABA

Research Excellence and Impact in African Artificial Intelligence: The 2nd Kambule and Maathai Awards
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A Personal Message

As we bring the second year of the Kambule and Maathai Awards programme to a close, we turn to look back at the journey we have taken. Our inaugural awards in 2018 saw the nominations of two inspirational African individuals who light the way for future generations of Africans on their paths. This year we were again inspired by the great breadth of the nominations we received, a testament to African excellence in diverse areas of the machine learning and AI space. Looking forward, we continue to seek out those who, through dedication, passion, and struggle, strive for and achieve excellence in their work, and continue our mission, as the Deep Learning Indaba to recognise excellence, foster communities, and build leadership within the African machine learning and artificial intelligence ecosystem.

Indaba Awards Committee
July 2019

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1. Introduction

The 2018 inaugural Kambule Doctoral Award and Maathai Impact Awards highlighted two inspirational Africans - Justine Nasejje and Yasini Musa Ayami - for their excellent research and innovation using machine learning. This year our mission continues: to seek out this excellence in other African heroes, and to recognise and reward it in a way that elevates Africans to achieve even greater things.

Our two-fold aim with this year's programme was to recognise excellence from a greater variety of candidates, and to seek out new partnerships for the programme, through which our winners can go on to foster collaborations, connect and share their work with a broader international audience, and bring their innovations to fruition.

Accordingly, alongside the Kambule Doctoral and Maathai Impact Awards, we were proud to introduce a new award, the Kambule Masters Award - to acknowledge research excellence in African Masters students. These three awards together form a central pillar of our mission as the Deep Learning Indaba organisation, to recognise excellence demonstrated by researchers and technologists across our African continent.

This year, we continue our partnership with the Africa Oxford Initiative (AfOx) whose aim is to build academic relationships between the University of

Oxford and African institutions. In May 2018, AfOx hosted the 2018 Kambule Doctoral winner, Justine Nasejje, at the University of Oxford, where she presented her research at the Focus on Research Africa (FORA) workshop. This year, AfOx is again the generous sponsor of both the Kambule Doctoral and Masters Awards prize money, as well as a research visit for the Kambule Doctoral Award winner to the University of Oxford.

We have also established a new partnership with Black in AI, an initiative very closely aligned with the Deep Learning Indaba mission of promoting diversity in machine learning and artificial intelligence. Black in AI will fully sponsor the winners of both the Kambule Masters Award and Maathai Impact Award to attend the Black in AI workshop at the largest annual machine learning conference NeurIPS in Vancouver, December 2019.

These three awards recognise ability, struggle, and African excellence in the nominated candidates and winners themselves. We, as the Deep Learning Indaba organisation, continue in our work to recognise these efforts, with the belief that the nominees and winners serve as an inspiration and reminder to our broader community that we, as individuals, have the ability to make meaningful contributions in our societies.

2. Kambule Doctoral & Masters Awards 2019

The Kambule Doctoral Award and Kambule Masters Award celebrate African research excellence at a doctoral and masters level: its recipients are those that uphold Professor Thamsanqa Kambule's legacy as a defender of learning, a seeker of knowledge, and an activist for equality. Thamsanqa Kambule was among the great anti-apartheid activists and the first black lecturer of mathematics at the University of the Witwatersrand, dedicating his life to education and learning.

2.1 Doctoral Award

The awards committee has selected one winner, and made an honourable mention in this category. The winner will be fully funded to attend the Deep Learning Indaba 2019 - the annual gathering of the African AI community - where they will present their doctoral research. They will receive a trophy and a prize of KES 70 000, sponsored by the Africa Oxford Initiative (AfOx). In addition, AfOx will also sponsor the winner to travel to the University of Oxford to present their research at one of their Insaka meetings, with the goal of establishing and fostering research collaborations.

Winner
Marcellin Atemkeng

The 2019 Thamsanqa Kambule Doctoral Award is conferred to Marcellin Atemkeng for his thesis which advances the state of knowledge in low-loss data compression methods for radio interferometric data. The outcomes of his work have direct application to the Square Kilometre Array (SKA), and are an outstanding example of African research driving the field of astronomy, and our understanding of the universe.

Atemkeng, M.T. (2016). *Data Compression, Field of Interest Shaping and Fast Algorithms for Direction-dependent Deconvolution in Radio Interferometry*. PhD thesis, Rhodes University, South Africa.

Figure 1: Marcellin Atemkeng Kambule Doctoral Award Winner 2019

Marcellin Atemkeng's thesis developed low-cost, low-loss compression methods for radio interferometric data, tackling the issues which arise from averaging over time and frequency in the image domain. The review panel described the thesis as a "major advance for radio astronomy in the big data area", and an

answer to "a burning question in the SKA community affecting the design of [radio telescopes]". Marcellin has three journal publications, and three accepted conference papers/technical reports as part of this thesis, but what clearly set his work apart was its strong technical contributions to an African-driven project, the Square Kilometre Array (SKA), and his work's importance in improving how radio telescopes process astronomical data. Marcellin is an exceptional example of an African researcher who is advancing the state-of-the-art in radio interferometry and helping us better understand our universe. Marcellin was funded by the National Research Foundation of South Africa.

Honourable mention
Stephanie Müller

Müller, S.J. (2019). *Genome-Wide Associations Between Human Genotypes and Mycobacterium tuberculosis Clades Causing Disease*. PhD thesis, Stellenbosch University, South Africa.

Stephanie Müller's thesis is the first work to conduct a genome-wide association analysis between human genotypes and Tuberculosis (TB) strains in two cohorts of African patients. Stephanie's work is extremely important in better understanding the genomics of TB in Africa, where the disease is particularly prevalent. The review panel described the thesis on being "well-conducted" and having the potential to "contribute tremendously to further experimental mechanistic studies that could identify virulence or drug-targets in the future".

Figure 2: Stephanie Müller, Kambule Doctor Award Honourable Mention 2019

2.2 Masters Award

The awards committee has selected one winner, and made an honourable mention in this category. The winner will be fully funded to attend the Deep Learning Indaba 2019, where they will present their masters research. They will receive a trophy and a prize of KES 35 000, sponsored by the Africa Oxford Initiative (AfOx). In addition, Black in AI will sponsor the winner to travel to the largest machine learning conference, Neural Information Processing Systems (NeurIPS) in Vancouver in December 2019 to attend the Black in AI workshop.

Winner
Hicham Hammouchi

The 2019 Thamsanqa Kambule Masters Award is conferred to Hicham Hammouchi for his thesis which proposes a system for automatic lip-reading from videos to assist and promote the inclusion of people with hearing impairments, laryngeal cancer, and vocal cord paralysis.

Hammouchi, H. (2017). *Reconnaissance visuelle de la parole Appliquée aux laryngectomisés* (English: Lip Reading with Hahn Convolutional Neural Networks moments). Masters thesis, International Sidi Mohammed Ben Abdellah University, Morocco.

Figure 3: Hicham Hammouchi, Kambule Masters Award Winner 2019

Hicham Hammouchi's thesis developed a system for audio visual automatic speech recognition (AV ASR), which automates lip-reading from videos to assist people with hearing impairments, laryngeal cancer, and vocal cord paralysis. Driven by the limited availability of compute and the high dimensionality of the video space, Hicham proposed a convolutional neural network based on Hahn moments to reduce the dimensionality of the videos, achieving state-of-the-art performance. The review panel commended the novelty of the approach, and its great potential to be applied to other domains. The thesis was also regarded for its "positive impact on the lives of patients.'' Hicham's work is inspirational, not only for the thesis's high calibre and social impact, but for the resource-constrained circumstances which drove the approach's core contribution - a reminder that adverse scenarios facing African data scientists can be a source of innovation!

Honourable mention
Mhlasakululeka Mvubu

Mvubu, M. (2018). *An Error Correction Neural Network for Stock Market Prediction*. Masters thesis, Stellenbosch University, South Africa.

Mhlasakululeka Mvubu's thesis provides a comprehensive analysis of a variant of recurrent network, the error correction neural network, relative to traditional recurrent network formulations. The thesis applies the model to time-sequence data for stock market prediction, and additionally makes a stand-alone software package of the model available to the public. The review panel commended the thesis on being extremely well written, and thoroughly presented, and noting its contributions are relevant to a "plethora of other applications".

Figure 4: Mhlasakululeka Mvubu, Kambule Masters Award Honourable Mention 2019
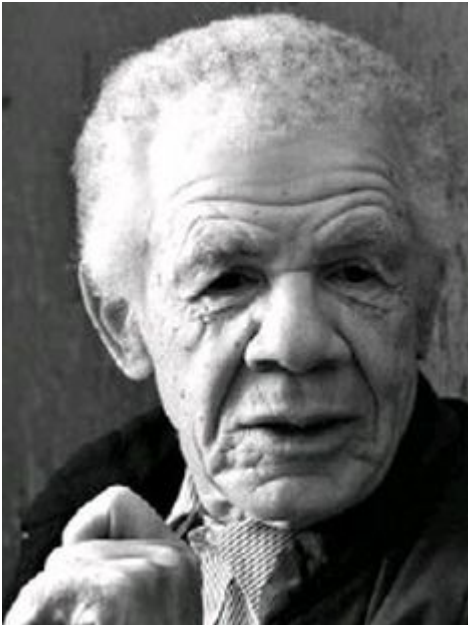
2.3 Remembering Thamsanqa W. Kambule

Figure 5: Prof. Thamsanqa Kambule, after whom the Doctoral and Masters awards are named.

Dr Thamsanqa "Wilkie" Kambule, one of South Africa's greatest mathematicians and teachers, is remembered for his life's contribution to education, specifically black education under the Bantu Education Act, a segregated education system enforced by the apartheid regime. Through his teaching, 20 years of which he was the principal of Orlando High School in Soweto, he went on to shape and influence many great minds, including Nobel Peace Prize winner Desmond Tutu, former South African national police commissioner Jackie Selebi, and former chief executive officer of the Independent Electoral Commission Pansy Tlakula. Alongside his passion for teaching, he was also a gifted mathematician. He was awarded honorary doctorate degrees from the University of the Witwatersrand, Pretoria and Fort Hare, and was the University of the Witwatersrand's first black professor in mathematics. In 2002, former South African president Thabo Mbeki bestowed him with the Order of the Baobab in gold for his exceptional contribution to mathematics, education, human development and community service, and in 2008 he went on to be awarded an honorary membership of the Actuarial Society of South Africa, a membership he was denied during Apartheid. The Thamsanqa Kambule Doctoral Dissertation Award is established in honour of his contributions to the field of mathematics and his dedication to furthering the minds of his students.

3. Maathai Impact Award 2019

The Maathai Impact Award reinforces the legacy of Professor Wangari Maathai in acknowledging the capacity of individuals to be a positive force for change: by recognising ideas and initiatives that demonstrate that each of us, no matter how small, can make a difference. Wangari Maathai was the first African woman to receive the Nobel prize, and one of the best examples of impact that can be made through tireless dedication to a cause.

3.1 Impactful Innovators 2019

The awards committee has selected one winner and one honorable mention in this category. In addition to being invited to speak at the Deep Learning Indaba 2019 - the annual gathering of the African AI community, the winner will receive a trophy, a monetary prize of KES 70,000, and will be fully-sponsored by Black in AI to attend their workshop at NeurIPS 2019 in Vancouver, Canada.

Winner
Olubayo Adekanmbi
Data Science Nigeria

The 2019 Wangari Maathai Impact Award has been conferred to Olubayo Adekanmbi for his role as the founder and key driver of Data Science Nigeria, an initiative focussed on training Nigerian data scientists, and strengthening the African machine learning and AI ecosystem more broadly.

Data Science Nigeria is an initiative that aims to strengthen the machine learning and artificial intelligence ecosystem in Nigeria. Olubayo's goal is to train one million African data scientists within the next year. The initiative has built a community around machine learning through the organisation of bootcamps and intercampus competitions. High-quality training materials are distributed in these events; for example Mr. Adekanmbi's AI Knowledge Box which is a two-terabyte hard-drive with ten thousand curated videos of world-class AI content. Olubayo's free AI for Starters e-book, with contributions from prominent AI researchers such as Prof. Yoshua Bengio, has been

downloaded more than 300,000 times. Furthermore, more than 10,000 students are attending this year's machine learning intercampus competition. These numbers attest to the impact Olubayos already has had in strengthening African machine learning.

Figure 6: Olubayo Adekanmbi Maathai Impact Award Winner 2019

Honourable mention
Nabuuma Shamim Kaliisa
Community Healthcare Innovation Lab

Nabuuma Shamim Kaliisa of Community Healthcare Innovation Lab created an AI-based mobile application which delivers cervical cancer e-consultations to women in Uganda - with over 15 000 women using the service since its inception 6 months ago. Nabuuma's work in delivering healthcare services to marginalised groups of people and bringing together local communities, is an example of the many ways in which machine learning and technology can be used for good in Africa.

Figure 7: Nabuuma Shamim Kaliisa Maathai Impact Award Honourable Mention 2019

3.2 Remembering Wangari Muta Maathai

Professor Wangari Muta Maathai, Africa's first female Nobel Laureate, is internationally recognised for her contributions to democracy, peace and sustainable development in Kenya and across the greater African collective. Born in rural Kenya, she was the first woman to earn both at the University of Nairobi, a doctorate degree and to be appointed to associate professor.

Figure 8: Prof. Wangari Muta Maathai, after whom the Impact Award is named

Alongside her academic career, Professor Maathai was a vociferous environmental and political activist, and was central to Kenya's first multi-party elections in 1992. She went on to serve in the Kenyan government, representing the Tetu constituency from 2002 to 2007 and working as the Assistant Minister for the Department of Environment and Natural Resources from 2003 to 2007. Her deep connection with the environment led her to found a pan-African environmental organisation, the Green Belt Movement (GBM), whose goal was to reduce poverty and promote environmental conservation through community-based tree planting. She was a fierce advocate for women, serving on the National Council of Women of Kenya for 11 years and uplifting the lives of women through her work with the GBM. Her contributions were recognised in 2004 when she was awarded the Nobel Peace Prize. She continued her inspirational work, founding the Wangari Institute for Peace and Environmental Studies, chairing global initiatives to protect African forest regions, and was appointed a United Nations Messenger of Peace on environmental and climate change. Wangari Maathai left a lasting impact on our continent and the world, and through this award we form a continuity of her spirit, and recognise the next generation of impactful Africans

4. Recommendations

The outcomes of the 2018 awards programme led us to made several key recommendations to strengthen the programme going forwards. These recommendations were summarised along three axes: improving the nomination pool in terms of its size and diversity, improving the review process, and partnering with more award sponsors.

We continue to work in these dimensions, with our key focus on broadening the reach of the programme across Africa. While we saw an increase in the total number of nominations across the awards this year, there remains work to be done, specifically in encouraging nominations for the research awards. We anticipate that as the work of the Indaba itself progresses, it will synergistically increase the number of Africans eligible for these awards.

Based on the outcomes of this year's programme, our recommendations are:

1. Mobilise a network across African institutions during nominations

Broadening the call for nominations will enable us to reach a bigger and more diverse pool of eligible candidates. It remains the case that the nominations we receive originate from a small set of African countries. We recommend a targeted approach whereby a network of contacts in computer science, mathematics and statistics departments across Africa is mobilised during the

nomination period. We also recommend connecting with organisations like the Next Einstein's Forum, AIMS, and Black in AI, as well as continuing our engagement with our satellite IndabaX meetings to relay the call for nominations.

2. Re-evaluate the submission requirements

We are conscious that the submission requirements of the awards may, in some cases, present a high barrier-to-entry. We recommend re-evaluating the current requirements and the platform through which nominations are submitted, to smooth out potential difficulties in the nomination process. This could include, streamlining the application form, moving it to a more accessible platform, re-thinking the supporting materials, and more clearly outlining the eligibility criteria.

3. Continue to seek out partnerships for the programme

Our introduction of sponsored trips to NeurIPS for prize winners had a positive effect on the number of nominations, especially for the Maathai Impact Award for which 17 nominations were received. Concrete incentives, therefore, are important, and we continue to seek out opportunities to elevate our winners - for example, by facilitating internships or work placements, and garnering higher amounts of prize money and funded opportunities for them to share their work with international audiences.

5. Financing the Awards

The Indaba organisation did not have an explicit budget for this awards programme, and thus sought sponsors to enable this important programme in strengthening African machine learning.

The Kambule Doctoral Award prize money was generously sponsored by the Africa Oxford Initiative who will also be hosting the winner at one of their Insaka meetings at the University of Oxford. The Kambule Masters and Maathai Impact Award winners will be sponsored by Black in AI to attend the Black in AI workshop at NeurIPS 2019.

The ideal prizes gives recognition to the winners, but also enables them in ways that supports their growth, by giving them exposure and opportunities that might not otherwise be possible. This includes larger prize amounts, and funding for travel and speaking opportunities. We continue to seek out partnerships to enable these engagements for the Indaba award winners in future award programmes.

6. The Future

The importance of creating spaces of recognition, those that celebrate ability, struggle, effort, and African excellence, should not be underestimated. We are proud to play a role in showing that such excellence is prevalent, and part of an ongoing and ever-strengthening machine learning community across our continent. We believe that the ingredients of community, leadership and recognition, which are embodied by the three principal programmes of the Indaba Organisation, are the foundations of a self-supporting environment that will, through its sustained activity, strengthen of African machine learning. These awards are essential and their scope will only increase over time. This year's award winners are inspirational. They have energised us in ways we could not have imagined, and their excellence deserves to be celebrated.

And so we continue to tell the story of African excellence

Appendix A: List of Nominees

Nominees for the Kambule Doctoral Award 2019
- Christopher Udomboso, University of Ibadan, Nigeria
- Marcellin Atemkeng, Rhodes University, South Africa
- Stephanie Müller, Stellenbosch University, South Africa

Nominees for the Kambule Masters Award 2019
- Joseph Ogbezode, University of Ibadan, Nigeria
- Natalya Apopo, Nelson Mandela University, South Africa
- Hicham Hammouchi, Sidi Mohammed Ben Abdellah University, Morocco
- Mhlasakululeka Mvubu, Stellenbosch University, South Africa
- Mohamed Isah, University of Buea, Cameroon

Nominees for the Maathai Impact Award 2019
- Daniel Akinjise, TAD Initiative, Nigeria
- Killian Onwudiwe, African University of Science and Technology, Nigeria
- Yvonne Wambui, Hepta Analytics, Rwanda
- Jeremiah Thoronka, African Leadership University, Rwanda
- Mustapha Diyaol-Haqq, Auricle AI, Ghana
- Robert Odhiambo, Strathmore University, Kenya
- Kelvin Jiraji, Agritech Hub, Niberia
- Shamin Nabuuma, Community Healthcare Innovation Lab, Uganda
- Kalebu Gwalugano, ASK-IRIS, Tanzania
- Jean-Vicente De Carvalho, Eagle Vision, South Africa
- Bochra Nouelhouda Mezouar, University of Tlemcen, Algeria
- Celina Lee, Zindi, South Africa
- Christopher Udomboso, University of Ibadan, Nigeria
- Olubayo Adekanmbi, Data Science Nigeria/MTN, Nigeria
- Phylis Ngigi, Jomo Kenyatta University of Agriculture and Technology, Kenya
- Mmoloki Ludoh Pitse, Radiant Earth Foundation, Botswana
- Patrick Kaberia, Jomo Kenyatta University of Agriculture and Technology, Kenya

Appendix B: External Review Panel Members

Kambule Doctoral Award
Jasper Horrell (Deep Data)
Delmiro Fernandez-Reyes (UCL)

Kambule Masters Award
Dina Machuve (NM-AIST)
Bubacarr Bah (AIMS South Africa)
Yannis Assael (Univ. Oxford/DeepMind)
Oriol Vinyals (DeepMind)

Maathai Impact Award
Vukosi Marivate (Univ. Pretoria, CSIR)
Sara Hooker (Google Brain)
Martha Kamkuemah (Ixio Analytics)
Jade Zoe Abbott (RetroRabbit)
Megan Yates (Ixio Analytics)
Tempest van Schaik (Microsoft)
José Quenum (NUST)
Mmaki Jantjies (Univ. Western Cape)
Benjamin Rosman (Wits, CSIR)

Dieter Hendricks (Qera)
Aubrey Mainza (UCT)

Avishkar Bhoopchand (DeepMind)
James Allingham (Wolfram Research)
Maraim Masoud (Insight Centre)
Richard Klein (Wits)
Omoju Miller (GitHub)

Appendix C: Indaba Awards Committee

- Adji Bousso Dieng, Columbia University
- Daniela Massiceti, University of Oxford
- Shakir Mohamed, DeepMind

Appendix D: Programme Details

The submission and eligibility for all awards were meant to be as simple as possible to reduce barriers to nominating candidates, and involved submission of required information using a set of online forms. Nominations period ran from February to April 2019.

D.1 Kambule Doctoral & Masters Awards

Submissions

- Nomination included a summary of the doctoral or masters thesis, its key contributions and the submission of the thesis itself.
- Also required was a supporting letter that described the main theoretical, methodological, and/or applied contributions of the thesis .
  - This supporting letter should be written by an academic who is in a position to comment on the merits of the work and the candidate, e.g. academic supervisor, thesis examiner, academic mentor, collaborators, etc.
  - The letter should be written by someone other than the person who is nominating the candidate.
- The examiners' reports of the thesis were also required.

Selection Process

Both doctoral and masters dissertations were reviewed for technical depth and significance of the research contribution, potential impact on theory and practice, quality of presentation, and its role in strengthening African machine learning.

All nominations were reviewed by an external panel, who themselves are experts in the subject area of the thesis, with at least one external reviewer for each nomination. Thereafter the awards committee reviewed all the evidence, which included the nominations, supporting letters, examiners' reports, and reviewer statements. The nominations were ranked and a winner was proposed. The proposed winner and the

overall selection process were audited by an external panel consisting of members of the Indaba advisory board, and an internal panel that consisted of members of the Indaba organisers who were not involved in the awards process.

Eligibility

The eligibility of the Kambule Doctoral Award included that:

- PhD theses in the broad area of computational and statistical sciences would be eligible. This included, but was not restricted to: machine learning, deep learning, artificial intelligence, statistics, probability, data science, information theory, econometrics, optimisation, statistical physics, biostatistics and bioinformatics, natural language processing, computer vision, and computational neuroscience.
- The Awards Committee interpreted the phrase "PhD thesis" to mean a dissertation in final form, i.e. approved by the student's examinations board, e.g., viva examinations completed, public defence completed, corrected version submitted, or degree awarded.
- The nominee must have been registered as a student and received their degree from an African university.
- A dissertation could be nominated by the author themselves, an academic who is in a position to comment on the merits of the work and the candidate (e.g., PhD supervisor, thesis examiner, academic mentor, collaborators), a department chair or head of department.
- Theses completed during the period of 2016-2019 were eligible for nomination.
- Nominations were welcomed from any African country.
- The thesis could be in any language, although the Awards Committee would require English translations for full consideration of theses written in other languages.
- All supporting letters and reports should be in English (or a translation supplied).

The eligibility of the Kambule Masters Award included that:

- Masters theses in the broad area of computational and statistical sciences would be eligible. This included, but was not restricted to: machine learning, deep learning, artificial intelligence, statistics, probability, data science, information theory, econometrics, optimisation, statistical physics, biostatistics and bioinformatics, natural language processing, computer vision, and computational neuroscience.
- The Awards Committee interpreted the phrase "Masters thesis" to mean a dissertation in final form, i.e. approved by the student's examinations board, e.g., viva examinations completed, public defence completed, corrected version submitted, or degree awarded.
- The nominee must have been registered as a student and received their degree from an African university.
- A dissertation could be nominated by the author themselves, an academic who is in a position to comment on the merits of the work and the candidate (e.g., Masters supervisor, thesis examiner, academic mentor, collaborators), a department chair or head of department.

- Theses completed during the period of 2016-2019 were eligible for nomination.
- Nominations were welcomed from any African country.
- The thesis could be in any language, although the Awards Committee would require English translations for full consideration of theses written in other languages.
- All supporting letters and reports should be in English (or a translation supplied).

D.2 Maathai Impact Award

Submissions
- Nomination could be made by the applicants themselves or by any other nominator. Nominations were to include details of the impactful work and the necessary contact details.
- We requested two supporting letters that describes the nature of the impactful work, why it is considered to be impactful, and in what way the nominated candidate(s)/organisation strengthens African machine learning, and any other relevant information. Letter writers could be from anyone familiar with the impactful work.

Selection Process
Nominations were reviewed to assess the breadth of potential impact they have had, their role in strengthening African machine learning and artificial intelligence, and the strength of the supporting letters.

All nominations were reviewed by an external panel, who are themselves with at least one external reviewer each. Thereafter the awards committee reviewed all the evidence, which included support letters reviewers statements and nomination statements, nominations were ranked and a winner was proposed. The proposed winner and the overall selection process were audited by an external panel consisting of members of the Indaba advisory board, and an internal panel that consisted of members of the Indaba organisers who were not involved in the awards process.

Eligibility
The Maathai Impact Award had a wide eligibility, which included that:
- The award was open to individuals, teams, or organisations.
- The Awards Committee considered impactful work to be broadly defined as any work -- technological, social, or economic -- that has had, or has the potential to positively transform our African societies. There are many ways to have impact, and we hoped that those who would submit nominations/self-nominations would be generous and creative in their judgement of the term 'innovation'.
- Examples of such impact included amongst others:
  - A research paper that shows important results using machine learning to solve important problems that address food security.

- ○ The work of an African startup using machine learning, whose work is set to have positive impact or demonstrate technical excellence in their focus area.
  - ○ An individual who has shown a track record of empowering individuals and groups affected or involved with machine learning.
  - ○ Government agencies or individuals contributing positively to the policy and society conversations around machine learning and artificial intelligence.
  - ○ A non-profit organisation that empowers innovators through skills development or mentoring.
  - ○ An established business that has deployed machine learning in an innovative way to positively impact their business and customer experience.
- ● Nominations could be made by anyone, including individuals and organisations themselves.
- ● Nominations were welcomed from any African country.
- ● All supporting letters were requested in English (or translation supplied).