Yebetumi

Annual Report of the Deep Learning Indaba 2023

DEEP LEARNING INDABA

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Deep Learning Indaba 2023
Issued: April 2024

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Message from the Trustees

The 2023 annual Deep Learning Indaba represents the culmination of a multi-year plan to build a vibrant and transformative African organisation that would strengthen African AI; it also represents a dream come true. As we gathered on the campus of the University of Ghana, we reached a key milestone of having taken the gathering of African AI to all parts of the continent, having begun in Southern Africa, and then having moved to East Africa, North Africa, and now finally, in West Africa.

Our planning for this year was guided by the words of Kwame Nkrumah, and his rallying directive that "*We look neither east nor west. We look forward.*" Looking forward for us meant a continued focus on our education, learning and community mission, and a focus on setting the Indaba up for future success. This meant enhancing the Indaba's organisation and governance, as well as continued experimentation and investment in innovations that have come to be expected from the Indaba. Together we continued to strengthen our key programmes, and experimented with new ways of strengthening African Machine Learning.

Our work for 2023 took place with the backdrop of a volatile and uncertain economic and technological environment. This included general inflationary concerns and specific ways they impact African countries and citizens (and specifically for us, in Ghana); the changing appetites and ability of donors to engage in charitable funding; a changing technical landscape in which Generative AI became established as a key global topic; the full exposure of extractive and harmful practices related to data enrichment work, especially the costs to workers across Africa; and changes in the international AI governance landscape, concerns of global safety, and the pace of AI progress.

Together these created several demands on how the Indaba should respond, which remains to ensure that Africans are owners and shapers of ongoing advances in AI. They made clear the importance of our work, and the focus on introductory and advanced AI education, local and high-impact research, convening Africa's AI community, and the need to connect ideas and networks. In achieving this, we hosted the largest annual Indaba to date, created new publications streams, supported new leadership through community-proposed workshops, awarded excellence, stimulated new ideas and outputs, included hackathons, mentorship sessions, and cultural celebration, and showcased the power of a community committed to taking control of its own future.

The Indaba was officially registered as charity, supporting our status and legitimacy as a world-leading community-based AI organisation and establishing the governance structures that will match the growth and maturity the Indaba now needs as it opens new chapters in its work. There continue to be new opportunities ahead in how we convene and support AI research and education across the continent, and we remain as committed as we were when the idea of the first Indaba was formed in 2016. The theme of the 2023 Indaba is most apt in this regard, Yebetumi - We Can!

Contents

Summary

Scope. This report provides a summary of the activities of the Deep Learning Indaba for 2023 (the Indaba in shorter form) and is the principal report that describes our activities, and impacts. Although the Indaba has several programmes, this report covers topics related to the mission and goals of the Deep Learning Indaba as a whole, the overall management of the Indaba as a charitable organisation, and the outcomes of the annual Deep Learning Indaba. The outcomes of other programmes related to community development (IndabaX, awards, mentorship) are included in a separate report.

Navigating this report. This report provides a detailed understanding of our operations, programmes and outcomes. This section provides a high level summary, and is followed by the key recommendations going forward. The remainder of the report describes the background, and details that have informed the recommendations for improvement.

Strengthening African Machine Learning and AI. The mission of the Indaba remains to Strengthening African Machine Learning and AI, and continues to be executed through programmes that build communities, create leadership, and recognise excellence. These triple aims are executed through three key programmes, including the annual gathering of the African AI community that is the annual Deep Learning Indaba, the locally-driven and owned community gatherings under the IndabaX programme, and the Indaba awards. In addition, new programmes are experimented with each year and refined, including the mentorship programme, ideathon, publications, innovation showcases, and others.

Indaba 2023 in Accra. The Indaba in Accra is the culmination of a multi-year agenda to create an organisation that was dedicated to education and research and that was owned and shaped by its beneficiaries. One way that this was achieved was to ensure that the Indaba would be hosted in all key regions, and having reached Accra, we completed a cycle from Southern Africa (Johannesburg 2017, Stellenbosch 2018), to East Africa (Nairobi 2019), to North Africa (Tunis, 2022), and finally to West Africa (Ghana 2023). This is an accomplishment that we are immensely proud of, and part of a tradition that will continue as the Indaba continues its work.

Overall changes this year. The Indaba continued to follow its experimental and inclusive tradition by adding new elements of the programme and seeking ways to reach and include more people. The IndabaX Programme reach 36 countries this year, the Indaba awards recognised excellent research and impact across the continent, a new stream to encourage publications was added, mentorship was included in every component of our events, we increased and structured our efforts to connect with communities, the unique cultures that make up the Indaba were celebrated, we hosted the largest Indaba thus far reaching almost 800 attendees at the annual Indaba, and improved our organisational approach with around 50 people forming our core committees , amongst many other improvements

and pilots. Each of these will be refined and included in our ways of working going forward; and are described in more detail in the remainder of this report.

Key challenges

Several challenges appear each year, especially in hosting events in different countries with different ways of working and other logistical, organisational and financial challenges. These challenges and risks are detailed later in this report, but some of the key challenges include.

- **Long-term funding.** The key need for the indaba is the need to secure longer-term funding that will enable investment into operations and raising the standard of each of the key programmes. Global economic conditions and changes in the research and AI environment make this uncertain, but a move away from annual based fundraising, towards a more diversified set of funds from wider donors and over a longer period of time is needed to ensure that the Indaba can reach its next levels of impact.

- **Cash flow.** The operational budget for each Indaba is used almost entirely, leaving little funds in reserve and also as outlay for future years. The Indaba continues to be highly efficient in the use of its funds to deliver the maximum impact for beneficiaries. But the lack of slack creates cash flow concerns, where early cash is needed for deposits on venues or other services and facilities. This can be addressed by securing different sources of long-term funding and multi-year planning approach.

- **Visas.** Navigating the visa regimes across different countries remains a significant barrier and operational overhead for the Indaba. Visa requirements are not ones that can be removed, reducing the set of tools available to mitigate this challenge. Some of these tools include choosing locations with simpler visa rules or choosing locations where it is clear there is strong government support to enable visas.

- **Improved governance.** As the Indaba has matured, the ongoing need to improve its governance approach, processes and standards grows alongside. This is a key area of focus for the Trustees going forward.

These risks and the overall success and impacts established by the Indaba provide a set of learnings and recommendations to take forward.

General Chair, Delali, giving opening message.

Recommendations

1. **Improved Governance**
   The Indaba has continued to grow and continued investments in its governance and operations should be a high priority, looking at all areas from the set of Trustees, policies around finance and charity structure, operational working, and long-term sustainability.

2. **Diversified Income Streams**
   The Indaba continues to rely on funding raised on an annual basis, and income split between donations and legacies and charitable activities. The sources of income can continue to be diversified, and secured over longer periods which will support the enhanced governance and operational ambitions.

3. **Annual Indaba 2024**
   The annual Indaba should continue to build on the tradition it has established, taking forward new challenges on delivering language-inclusive approaches to the annual gathering, and looking at ways of addressing questions related to visas, selection, and the amplification of research and translation activities that demonstrate public benefit.

4. **Multi-year Indaba Planning**
   The Indaba should move to a multi-year planning approach to provide more clarity on future goals to donors, beneficiaries and stakeholders, while also supporting the sustainable growth that is aimed for.

5. **Separate fundraising for IndabaX and Annual Indaba**
   As part of the approach to diversified funding, the Indaba should separate its efforts in raising funds for the annual Indaba and the IndabaX, with the aim to raise more specific funding for IndabaX events across the continent.

6. **Awards Programme**
   The awards programme should be maintained with the aim to establish it as being amongst the most prestigious awards programme in AI research in Africa and internationally.

7. **Strategic Thinking**
   The Indaba should codify its strategy and theory of change for the next few years, which will make concrete the previous suggestions and set the Indaba up for greater success.

Annual Indaba in Accra

Overall Outcomes

The 2023 Indaba was held in Accra, Ghana, completing a cycle of hosting the annual Indaba event in key regions across our continent. One interpretation of the mission to strengthen African AI and machine learning is to ensure that this annual gathering of the African AI community moved to as many countries as possible, and hence embody the wide-ownership by the community of the Indaba and its outcomes, and this culmination of the Indaba in west Africa represents an important milestone in that commitment.

Overall, the annual Indaba again represented a genuinely unique, community-uplifting and context-specific environment for teaching, learning, research and networking in topics in advanced computational sciences and AI. A major part of this success is due to the exemplary leadership of the General Chairs, Amal Rannen-Triki, Avishkar Bhoopchand and Delali Agbenyegah. They oversaw 15 committees who all came together to deliver an incredible experience that truly highlighted the growing expertise and interest in AI across Africa, and demonstrated a service and dedication to the African AI community that embodied a core value of the Indaba.

The Indaba sought to amplify what was possible from a gathering of people within one week, while also being an opportunity to bring together the different programmes of the Indaba. The Indaba planned and brought together around 800 people across different career stages from undergraduates to industry professionals, although the bulk of the participant focus remained on Masters and PhD students who would benefit the most from the type of programming offered. The commitment to reducing financial barriers to participation was maintained, by not having registration fees for student attendees, ensuring that food was provided throughout the week, that as much visa support was provided as possible, and that a large number of people were supported with flight and accommodation to attend. The costs of flights and accommodation remains a large entry in the costs of delivering the annual Indaba and achieving its wide-representation.

Three key features stood out from this year: the introduction of French support, the culture evening, and the research publications stream. French is the second most widely spoken language on the continent and in order to broaden access to the Indaba's content, applicants were able to apply in French, to attend French parallel sessions and access live translation into French of key sessions and keynotes during the Indaba. The success of this experiment paves the way for the inclusion of more languages, including native African languages in future Indabas. The culture evening was an idea suggested at the strategy meeting at the end of the Tunis Indaba, which put forward to host a day where people would come in any forms of traditional dress, and also share an experience of local culture with other attendees. This was a key highlight of the week. The research in Africa showcase

again represented two-days of research by African students and industry practitioners. To create more visible paths to concrete outcomes, this year saw a publications track that asked for submissions that were reviewed and then became part of the first collection of paper outputs from the Indaba.

Programme Summary

Maintaining consistency with the previous year's approach, the programme consisted of four principal components:

- **Tutorials.** Tutorials (lectures) have been a standard part of the opening of the Indaba week that aim to provide introductory understanding of concepts in the field.
- **Keynotes.** Talks delivered by leaders from across the continent and internationally that expose attendees to leading researchers and educators in the field.
- **Research in Africa Showcase.** Focussed time to highlight research done by Africa-based researchers through spotlight talks and poster sessions.
- **Workshops.** Topic-specific sessions that allow focussed discussions and learning in more specific topics and community-building around a specific subject area.

In addition to these, the programme also made space for hackathons, networking sessions, the ideathon, culture evening, and women in AI focus session. The full programme can be seen online.

Research

Highlighting and showcasing research in AI from across Africa continues to be a key focus of the Indaba week. The Research in Africa Showcase takes up two days of the Indaba and is composed of poster sessions and spotlight talks. The poster sessions continue to be a highlight of the week, demonstrating research across subject areas, including natural language, environmental science, agriculture, healthcare, and topics in foundational AI research in optimisation, multi-agent systems and reinforcement learning, amongst others. There were almost 300 posters submitted and showcased this year. The full list of posters can be found online.

An important step was the creation of a publication track. This track invited submissions of short papers for submission for review. The purpose of these submissions and review was to provide better feedback to authors and would form a non-archival set of papers that could then be further refined and submitted to a formal journal or conference. The review process was managed through open-review and the papers are available there for continental and global scientific and research communities. The response to this publication track has been successful and is one that we expect will continue and to be refined further as a tool of advancing AI research and education, supporting more public knowledge and availability of research, and highlighting the quality of research from Africa.

Ideathon

The ideathon is an experiment we started in 2022 with the aim of fostering innovation and collaboration across borders in the continent. In this first experiment we hosted a competition with two main requirements:

- The proposed idea should contain a machine learning component.
- The proposing team should have members who are based in at least two African countries.

Building on [the success](#) of this first attempt, we ran a second edition of the competition in Accra with a few differences:

- In 2022, all the proposals we received were application-based pitches. While we recognise the importance of the great entrepreneurial ingenuity and drive in the community, the aim of the programme is to also support research ideas. We therefore proposed 2 tracks this year, a research track and an application track.
- In order to support this change, we release the requirement on the team composition to a recommendation. The team diversity remained however one of the axes of evaluation during the pitching session.
- We also launched the programme earlier and provided platforms for the interested participants to connect and start sharing ideas before the start of the week. This change aims at allowing more time to the participant teams to build their ideas.
- Finally, we added two evaluation criteria: ethical considerations and distribution of roles in the teams.

The programme was run with the same components as in 2022. We received 19 applications, 2 of which were research proposals. 14 teams then proceeded to participate in a mentorship session to refine their ideas and pitches. Finally, 11 teams presented their ideas in two well attended pitching sessions. We are extremely grateful for the generosity, the amazing efforts and the thoughtfulness of our mentors and judges. Their wonderful advice contributed greatly to improving the projects. The evaluation of the pitches took into account 5 criteria: motivation and potential impact, feasibility, team composition and diversity, ethical considerations and roles distribution. This allowed us to select 4 projects:

- AI Based Malaria Detection and Surveillance
- Healtor (now Mwambaphila) : A Monitoring System for Heart and Kidney Disease
- DeepSignal: Deep Learning for mmWave Beam Prediction
- Non-Intrusive Fish Weighing

Each of the winning teams was offered compute credits of the value of $10,000 offered by Google's CURe programme, regular check-ins with the ideathon team. During the week, we also had the opportunity to hear from and celebrate one of the winners of the 2022 edition, [Amathambo AI](#) who since then incorporated. A special highlight was the recognition of the promise of this project with the The Äänit Prize that was awarded to the team by the Mandela Rhodes Foundation.

This edition highlighted a few challenges that we will continue to work on as we move forward. The main challenge remains sourcing long term mentorship, with particular focus on business development, as the domination of application-based ideas carried on. The creation of the research track led to a slight increase in the research ideas from 0 to 2. Building teams and pitches around this type of ideas remains nonetheless a challenge and requires more support. Finally, the ideathon has a significant footprint on an already full programme. There is therefore an interest in decoupling this programme from the main indaba, which can in turn allow for better support and more robust proposals.

Continental Representation

We continued to show representation of the continent in all its different forms. Consistent with previous years, anyone is able to apply to participate in the annual Indaba (as well as for country-based IndabaX events), although the people who attend are selected through a selection process. We continued to refine the selection process, mainly improving the types of questions being asked and the types of information that is gathered through the application form, with the aim to ensure that we are able to select and curate a pool of participants, who are some of the key beneficiaries, and who would most benefit from attendance at the Indaba (in advancing their knowledge, education, career goals, and scientific and professional network, amongst others benefits). Every application received two independent reviews that provided a score following a review rubric and comments on the suitability for attendance at the Indaba. All applications were submitted, reviewed and finalised using our open-source [Baobab](#) platform. In total we received 2268 complete applications for attendance.

Following this selection process, the 2023 annual Indaba continued to represent the diverse composition of Africa's AI talent. The overall Indaba comprised just under 800 attendees from all career stages, including undergraduates, postgraduates (both masters and PhD), postdocs and faculty, and those in industry roles. Of attendees, 45% were women (assessed using self-identified demographic data), and came from 36 different countries from the African continent, and 62 countries globally. This African representation is achieved by ensuring that there are two representatives from each IndabaX country, which creates a deeper connection between these programmes of the charity.

All student attendees are supported financially in that there are no registration fees to attend, and that meals and transportation is provided throughout the week, removing financial barriers to participation. To support the enhanced representation and participation just over 200 travel grants, covering flights or bus tickets, and 500 accommodation grants were awarded, above the base-support from registration. We make these bookings directly for attendees, which is a significant undertaking. This effort is a key component of reducing barriers to participation since this accounts

for cases of where people may not have bank accounts and credit card facilities, reliable online access, or may not have travelled outside their countries before, in addition to removing the risk of making individual payments and knowing the use of charitable funds. We also support the visa fees for participants, which is itself a major operational effort (see Challenges and Risks below). These grants enable a transformative experience for attendees and shape their careers in significant ways, and are a key component of the success of the Indaba and its charitable work. It also continues to represent a major component of the cost and operational effort for the annual Indaba, making the funding of this component a key focus area for the annual Indaba going forward.

Umuntu Prize

The Umuntu Prize is awarded by the Indaba Board for services to the African AI community; and to those who remind us that Umuntu and Love are real principles that lead to transformative change.

In 2023, the recognition was given to **Elizabeth Benson**. Elizabeth has been a tireless champion of African AI communities. Since 2019, Elizabeth has been responsible for the mammoth task of arranging travel for participants attending the annual Indaba. This involves flights, buses, coordination of information with agencies, individuals, accommodation providers, and many others. The scale of the coordination is something that is not underestimated, and for truly dedicated service and in an area where there would be few other volunteers, the Indaba board is proud to recognise Elizabeth in this small way. Special mentions were given to: Rhonda Nana Safowa; Siobhan Hall; and Lesego Makgafola.

Organisational approach

Annual Indaba Organisational structure

This year further steps were taken to establish operational structures that could be repeated across years and more effectively use the time and contributions of the many volunteers who are committed to the mission of strengthening African machine learning. The overall organisation took inspiration from the structures and best practices used by many of the large international conferences in AI. The organisation took a hierarchical structure with the following roles:

- **General chairs.** The general chairs are empowered as the overall leads of the annual Indaba and own all decisions related to bringing the Indaba together. They are accountable to the board of trustees, and should seek approval for all matters related to finances, contracts, legal, risks or other matters that affect the overall standing of the Indaba as an organisation. The general chairs oversee a large committee of people, and their role is to coordinate these groups, ensure effective communication, and take decisions to deliver the organisation on time. This is a large role that requires experience and regular commitment.

- **Programme chairs.** The PC oversees the technical programme which includes tutorials, workshops, research showcase, and keynote speakers.
- **Sponsorship.** This group is responsible for creating and sharing the prospectus for donors and sponsors and undertaking the challenging work of ensuring that the Indaba raises sufficient funds each year to deliver its events. Sponsorship plays a major role, since it is the success of this committee that enables the other parts of the Indaba's work.
- **Applications and Selections.** The Indaba continues to select its attendees, and this committee oversees this selection, ensuring that we take fair and consistent decisions, that the Indaba represents the diversity of the continent, and that attendees are selected who will contribute to the environment of the Indaba, and will benefit from this form of learning and development environment.
- **Local Organising committee.** The LOC is responsible for coordinating elements of the Indaba's delivery on the ground. They are a group of volunteers who typically are part of the local AI community and have participated in IndabaX events. They engage with local universities, suppliers, facilities providers and help ensure that expectations and communications are clear.
- **Accessibility, Safety and Inclusion.** Ensuring that groups of people come together in safe and respectful ways is a key responsibility of conference organisers, and the role of this group. In addition, they assess any special accommodations that are needed by those who have special requests or needs.
- **Communications.** This group ensures that we tell the story of the Indaba in as effective a way as we can with the resources we have available.
- **Publications.** As we seek to increase research and education capacity, this group handles a large part of reviewing and ensuring that publications are one output of the Indaba week and that can highlight the important work being undertaken across the continent.

There are other committees, including faculty engagement, community engagement, hackathon, ideathon, mentorship, awards, IndabaX, and Baobab groups responsible for other parts of the Indaba week and interactions with other Deep Learning Indaba programmes.

Accessibility, Safety, Inclusion

As the Indaba has matured as an organisation and an annual event, the need to mature in our approach to establishing community standards has naturally arisen. This was addressed by establishing a focussed committee with responsibility for aspects of accessibility, safety and inclusion (ASI) for the Indaba and its programmes. This included support for mothers and those with physical accessibility needs, ensuring awareness of the code of conduct, handling reports, and ensuring effective communication of improvements and needs to the general chairs and trustees. The committee identified a useful resource, How to Respond to Code of Conduct Reports (written by Valerie Aurora and Mary Gardiner) that served as a training resource for members of the team.

Continuing to identify resources for wider training and compliance, and adapting to international best practice in ASI are areas of ongoing learning and improvement for the Indaba.

Challenges and Risks

Like those before, this year revealed new challenges in the delivery of the annual Indaba programme, and sets of risks and areas for change in the future. Some of these challenges were:

- **Visas.** Visas for participants continue to be a challenge, and suggest the need to advocate for a different visa regime for scientific advancement and events like the Indaba across African countries. We do our best to engage with government ministries responsible for visas, but this is time consuming and involves timelines and communications across a broad set of consular locations that is generally challenging. There are also fees involved that can be quite high. The typical visa fee for Ghana is $150 that needs to be paid by individual entrants to the country, and is a cost and barrier to participation at the last mile that can't be ignored. Supporting these payments through individual support grants for those attendees who have been awarded travel grants also poses financial risks to the Deep Learning Indaba organisation in terms of large numbers of international payments to individuals. Since visa approaches are part of doing work in any country, part of our approach going forward should be to consider future locations and prioritise these choices based on the ease of the visa approach.

- **Participant selection.** The selection of participants is a complex undertaking that is a major influence on the timelines associated with delivering the Indaba. Finding ways of both ensuring fair selection, identifying attendees that would benefit the most from participation and support, supporting the aims of diverse continental representation, and having a streamlined process is one to address in future. There is an opportunity to simplify the selection process for certain participants (like industry attendees). Changes in this approach have significant impacts but are one where changes can be made for future to support a modified and streamlined approach.

- **Facilities.** We rely on the facilities of host universities to reduce costs for participants, but also as part of the commitment of deeply engaging with universities and our partners. Facilities can be variable, and they can fall below expectations, even with many site visits and other assurances. In particular, there were challenges with hot water in dorms, managing noise, and the reliability of the internet. Deeper site assessments and lists of requirements are part of addressing these challenges. Yet these are issues that we have seen repeated across institutions and across countries and will continue to appear until systematic changes to the state of investments in universities across the continent changes. This is an opportunity to find deeper ways to partner with our host and partner institutions, and to find ways to provide infrastructural support that would leave a longer legacy to the institution once the Indaba ends; but this will need to be funded and aligned with the Indaba educational mission to be realistically implemented.

- **Code of Conduct and Safety.** Our approach to safety and event conduct has matured over the years, with many more tools and systems in place. Awareness and establishing a deeper understanding of the Code of Conduct and the available reporting processes and support is needed so that we ensure the Indaba provides the most conducive environment for learning and exchange. Continued emphasis on improving awareness, understanding, reporting, tools and processes continue to be a needed component of work for future years.

Relation to Other Programmes

IndabaX

The IndabaX is a key part of the engine of educational and research transformation that is part of our work. By establishing local communities of practice and learning, the IndabaX creates machine learning capacity in individual countries across the continent, and a stream of future leaders, teachers, researchers, and innovators in AI. The IndabaX is intended to provide the base level of engagement and knowledge that is needed for attendees, and those that attend from the IndabaX would benefit from more advanced material and research closer to the state of the art, and would be best able to take that knowledge back to their individual IndabaX communities. Over 2023, there were 36 IndabaX events, which on average were supported with small grants of around $2000. These grants are small, and the programme strongly encourages IndabaX groups to be supported by local funders as part of how they build support and strengthen their local AI ecosystems.

The IndabaX 2023 events had a combined attendance of close to 6,000 with a gender ratio of 65% male and 35% female. 74.1% were organised in a hybrid (Virtual and In-Person) format, 22.2% were In-person while 3% were purely virtual.

In regards to sufficiency of funds that were allocated to the different IndabaX 2023 events, 61.5% of the organisers stated that the funding was not sufficient for the organisation of their respective events while 38.5% of the organisers were content with the financial support that was awarded to them. Finding ways to independently support this programme is a key need to its success. *More details on the IndabaX outcomes will be reported on in a separate report.*

Indaba Awards

The Indaba awards represent an additional programme that provides a recognition of research and impact excellence by those based at African institutions. In 2023, the awards for Masters research was named after the African educational leader Grace Allele Williams. The Allele Williams Masters award, joined the Kambule doctoral award, and the Maathai Impact award. The recipients of these

awards are selected through a nomination and review process. The prizes vary each year depending on the funding that is available, but for this year, specific funding from the Mozilla foundation was available to provide cash awards to the winners. The awards are an important component of achieving charity objectives in recognising AI in Africa and ensuring that the work associated with these award recipients is shared more widely. Work needs to continue to ensure that these awards become established as the leading awards for dissertations across Africa, and is part of the ongoing work. *More details on the Indaba Awards outcomes will be reported on in a separate report.*

Mentorship Programme

The mentorship programme is in its fourth year and continues to be a key mechanism for fundamental skills learning and exchange. The programme matches community members with mentors for short-term personalised interactions across a wide range of topic areas. The programme maintains a list of mentors who have signed up to volunteer their time to support individual coaching and development, covering areas of CV design, scientific writing, presentation skills, research practices, interviewing and career planning, amongst other topics. As of March 2024, the programme has seen 467 successful matches with 200 mentors from across the globe. Success stories to date include mentees going on to publish papers, as well as accept prestigious scholarships for postgraduate studies. Over the next year, the programme's aims, topics and target audience will be revisited to ensure it continues to meet the needs of the wider Deep Learning Indaba community. *More details on the Indaba mentorship programme and outcomes will be provided in a separate report.*

Lacuna Fund Grant

The Indaba specifically was a recipient of a grant from the Lacuna fund that aims to support African language data sets and resources. These funds support 4 specific projects, on machine translation, Nigerian language data sets (Naija Voces), Portuguese data resources, and Domain Adaptation. For each of these, a key recipient is the Masakahane Research foundation, being the leading community for African natural language processing. This grant is related to our charitable aims since it directly supports the research and work on African languages and researchers that will enter the public domain, and enables the future independent working of organisations like Masakahane. The grant began in the fourth quarter of 2023 and will complete by the second quarter of 2024. Further details on this will enter in next year's report. Supporting grants and research outcomes in this way has been a useful expansion of our charitable work, and is an area for continued support in future.

Organisational Growth and Governance

Charity Registration

A key activity this year was the transition of the Indaba from a company limited by guarantee without share capital, to also being a registered charity with the Charity Commission of England and Wales. This is a step towards showing the commitment of the Indaba to its beneficiaries, to strengthen internal governance, and to make possible the opportunity to work with other funders and organisations who are only able to support registered charities.

The Indaba took on the services of Stone King, a firm with specialisation in charity registration. This work included changes to the articles of association to better align with a charity, submission and reviews with the Charity Commission, and updates to the Companies House and registration with the Charity Commission. The company articles, incorporated on 15 March 2019, were amended by special resolution and registered with the Companies House on 13 September 2023.

The company's articles now focus on the work of education in Africa and beyond, and the ability to drive positive outcomes and dissemination of research in areas related to AI. The new objectives are:

Charitable objects
The charity's objects ('objects') are for the public benefit: (1) to advance, anywhere in the world but primarily in africa and other places where such disciplines are under-developed and which are under-represented in international scientific and technological work in these disciplines, the education of the public in the subjects of artificial intelligence and machine learning and related fields, in particular but without limitation in the science, applications and ethics of artificial intelligence by: (a) hosting, arranging and supporting (and supporting others to host and arrange) conferences, lectures, workshops and other virtual and physical events to promote knowledge and understanding of the subject including recent developments in the field, and to stimulate useful discussion and exchange of information about artificial intelligence and machine learning and related fields; and (b) providing grants and other forms of support to encourage and promote academic study in the fields of machine learning and artificial intelligence; and (2) the advancement of education into the practical uses of machine learning and artificial intelligence in society, and in particular how machine learning and artificial intelligence can be used for the public benefit for example in areas of health and environmental protection, by promoting research into the above subjects and publishing or disseminating the useful results of such research.

Fundraising and Sponsorship

We raise funds in a number of ways, including from corporate donors, trusts and foundations, one-off and regular donations from the general public, philanthropic donations, and individual

fundraisers. We do not use third-party professional fundraising agencies. Where people or organisations raise funds in aid of the Indaba, we request they follow our standards.

The donations and contributions remain the key enabler of the annual Indaba and its activities. Our donors and sponsors provide funds to support the charitable activities and the general work of the Indaba, and to make their contributions to strengthening African machine learning and AI. We remain immensely grateful for their support and participation, which enriches the experience of the beneficiaries of the Indaba.

As in the past, our prospectus for donors and sponsors is based on a tiered system. The tiering system allows us to create many different entry points to provide financial support for the Indaba. At the same time, from a financial responsibility perspective, these tiers allow us to be clear on what typical amounts we expect as normal funds entering the Indaba and their purposes, and are part of our financial oversight approach.

The partners who helped support the 2023 Indaba come from a range of institutions and sectors, and we continue to focus on this broad-based approach to ensure the widest set of backgrounds and uses of AI. The 2023 donors and sponsors are listed in the appendix.

Programme Costs and Finances

Managing costs and significant inflationary pressures was a key concern for this year. General trends in the economic environment meant that costs generally were higher (such as those for international travel due to higher energy and fuel prices), coupled with specific pressures facing the Ghanaian economy. These factors require agility in how we spend and put greater pressure on our fundraising needs. More detailed analysis of expenditure and costs are available in the independent accounts that were produced for the financial year and lodged with the Companies House. In general the proportion of costs match those of previous years across our programmes.

Annual Indaba.

Key costs are all those associated with the organisation of a large event. Two key costs address over half of the costs of delivering the Indaba.
- **Student travel and accommodation.** We continue to be committed to ensuring representation from across the continent, and this was achieved by ensuring that there were at least two representatives from the different IndabaX groups. Overall we continued to support just over 200 travel awards, which were funded through combinations of funding from the general budget and specific funding to support travel.
- **Catering.** The cost of meals can present a financial barrier to participation. We provide meals 3 times a day for all participants. This has the effect that it removes these financial

barriers to participation and obstacles that could prevent full participation, provides a way for participants to engage with local cuisine, and provides a backdrop for networking and knowledge sharing that is a key part of the Indaba's pan-African focus and work.

Other costs incurred are for events, audio-visual needs, venue hire, branding, registration, visa fees, transport, and paramedics and safety.

The overall Indaba costs remain cost-efficient with a great deal of oversight from teams to ensure that the best value for money is obtained, while maintaining high levels of ethical and sustainable standards. Moving to new countries each year means that existing relationships and cost sharing aren't available. An additional set of costs that will require more attention going forward are foreign exchange costs and bank fees that come into play both in receiving funds and transfers for service providers. Steps to mitigate these concerns are part of the work for the next year.

The proportions of costs remain consistent with previous years, and rounded costs amounts for 2023 are given in the table below.

Cost Area	Costs (2023)
Travel Support	$190,000
Visa Support	$30,000
Catering	$120,000
Event and Venue	$130,000
Accommodation	$40,000

IndabaX

The IndabaX remains a highlight cost effective programme. The financial support for IndabaX groups has remained at the level of $2000 on average for the past few years. This amount is usually insufficient to fully fund these events, and IndabaX groups are required to seek additional funding to make their events possible. The growth and success of this programme is due to the effectiveness of the leadership group that has put in place regional leads to build and maintain relationships and understand the support needs of different groups across the continent.

There is a key need to increase the base amounts of funding (with a target to double this amount), but that requires special and targeted fundraising needs that has been difficult to achieve. Additional challenges arise in the programme due to the need for greater due diligence as we operate financial transfers across large numbers of countries and the need to adapt to changing sanctions and financial high-risk locations (as listed by the OFSI). The effectiveness of the IndabaX leadership, and the

addition of new policies to guide due diligence and know-your-customer mandates are tools in place to address these concerns. The foreign exchange concerns noted in the previous section, apply here as well.

Supporting Communities

By bringing together people from across the continent to advance education, learning and research, we also create a platform for new and existing groups to meet and strengthen their own charitable and empowerment missions. This role as a platform and space for various groups to come together has become a key feature of the annual Indaba week, and one we seek to support more directly. For the first time this year, we have directly supported a community booth to provide a space for all IndabaX community groups to create a space for contact with participants and showcase their work and opportunities for engagement. We also wish to support other community groups to use the Indaba week as a time for their own annual meetings (like natural language and grant funders), and to encourage the creation of new groups that advance research and learning in AI in specific areas of importance to African communities and the world (e.g., in climate action).

Our community and stakeholders

We are part of a global community that shares our mission, and who bring that mission to life through their actions. We make sure that we understand our users and communities, and we proactively seek out user and community feedback including from:

- **Indaba Community.** Our key group who attend IndabaX and Indaba events and who provide feedback through surveys, emails and direct feedback.
- **Researchers, educators, and policy makers.** These groups inform how we understand the education and research landscape and how we think of our programmes and work.
- **Community Leaders.** The leaders of various other grassroots groups share insights from how they run their organisations, how they are driving new research and education experiences, and opportunities for partnership and impact.
- **Volunteers.**The Indaba runs because of the invaluable contribution of many volunteers who provide on-the-ground insight into where we can act for the greatest effect.

We also proactively seek feedback from other stakeholders including the Indaba team, supporters, donors, and suppliers.

Communications and Marketing

Communications was improved by the significant efforts of a dedicated group for communications. The aim for this group was to establish more control and surfaces for sharing updates and messaging related to the Indaba. Two key aspects stood out across the year.

Sauti Yetu newsletter. We established a monthly newsletter that was the key way of sharing information about the Indaba directly with beneficiaries and those interested in the Indaba's work. The format is experimental and open to adaptation to allow more effective messaging, but its key features include a messaging each month from the leaders of the Indaba, updates on organisation, and news and opportunities related to AI and research in Africa. The monthly feature "Letters to the Community" are also reproduced on the blog to also ensure there is fresh content on the blog. Sign up for Sauti Yetu [here](#).

iAfrikan Media Partnership. The Indaba partnered with iAfrikan Media during the annual Indaba week in Accra, and included interviews with Indaba leaders, attendees, donors and those in the Ghanaian ecosystem. This was a mutually beneficial partnership that for us aimed to provide other ways of sharing the stories and importance of the Indaba's mission and work. The partnership has continued to grow beyond the Indaba and the iAfrikan team will continue to boost our communication strategies.

These aspects of communications are ones we aim to continue and to amplify to support our messaging and aim. Limited resources to support this, the need for special skills in the volunteer group, and changing traditional and social media landscapes remains risks to delivery that are being mitigated: by leaning more into tools offered to charities and identifying key partnerships; by building more shadow volunteers in this and other portfolio areas; and diversifying how and where we communicate (like through the newsletter and blog, and on wider surfaces like LinkedIn and Facebook).

Governance

Trustees Duty

Trustees' duty to promote the success of the Charity – Section 172 statement. The trustees have a duty to promote the success of the Deep Learning Indaba and, in doing so, are required by section 172(1) of the Companies Act 2006 to have regard to various specific factors, including:
- the likely consequences of decisions in the long term the interests of employees
- the need to foster relationships with stakeholders
- the impact of operations on our communities and the environment the maintenance of our reputation for the highest standards of conduct

Governance processes

The Deep Learning Indaba is a company limited by guarantee and is a registered charity. It is governed by a Board of Trustees. Trustees are elected and co-opted under the terms of the Articles of Association. The Indaba's Board is committed to adopting the principles set out in the Charity Governance Code and undertakes a self-assessment against the Code on an annual basis.

The board sets the strategy and approves the business plan. It monitors progress against objectives and ensures the principal risks and uncertainties facing the charity are identified and appropriately mitigated having regard to the charity's risk appetite. It is responsible for Trustee and executive management succession planning, setting the charity's culture and upholding the charity's values.

The Board is supported by a number of other committees:
- **Executive Committee.** The executive committee is an expanded set of trustees that also includes the heads of the charitable programmes. This group has a broad understanding of the mutual constraints and works collaboratively to deliver the Indaba's work as a whole.
- **IndabaX Leads.** The IndabaX is a high-priority programme with a set of regional leads. These leads have broad on-the-ground understanding of the state of the IndabaX groups and local machine learning communities across the continent.
- **Advisory Board.** The advisory board comprises senior leaders of the community. The advisory group has not been effectively used since the pandemic, and it is intended to reconstitute the advisory board and use their expertise and network more effectively going forward.

Challenges and Risks

The Trustees are responsible for the management of risks to the charity. These risks are reviewed regularly, and include:

- **Income:** The failure to generate diverse, sustainable sources of income sufficient to fund our medium term plans.
- **Talent:** The inability to attract and retain a diverse and talented team adversely impacts on our ability to deliver our mission.
- **Data protection and network security:** The mismanagement, misuse or loss of data, and/or a compromise to our network results in a loss of data and/or service.
- **Business continuity:** The failure to plan for and/or manage significant business disruptions leads to loss of income, damage to our brand, or our ability to achieve impact.
- **Expenditure:** The failure to effectively manage rising costs as a result of inflation affects long term sustainability and the ability to achieve desired impact.

- **Financial Risk Management, Objectives and Policies:** The charity aims to minimise financial risk including through the preparation of incoming resources and cash flow forecasts, and ensuring that adequate financing facilities are in place to meet the requirements of the business.
- **Currency Risk:** The Indaba generates funds and expenses in foreign currency. The Indaba now holds bank accounts in foreign currency to help mitigate the company's foreign exchange risk

Conclusions

The work of the Deep Learning Indaba continues to be transformative for its communities. There is no doubt that the Indaba does represent a leading organisation for AI in Africa, energised from the grassroots, and driven by a strong commitment to the values of service to the community, the advancement of research and education, and the ownership of transformative technologies that is central to the flourishing of our societies now and in the future. This work over 2023 has allowed us to continue to advance the mission of Strengthening African AI and Machine Learning, and has also highlighted several areas where we can continue to make improvements to better serve our communities and beneficiaries. Our next phase is clear, and as invoked in the opening, We Face Forward. Yebetumi.

Poster sessions held outside

Appendix

Trustees and Committees

Impact Testimonials

The echoes of gratitude from participants of Deep Learning Indaba 2023 have been overwhelming. A first-time attendee remarked, "The event was a masterclass in AI, blending theory with hands-on experience". Another participant shared, "The diversity of topics and speakers made every session a unique learning journey". A volunteer reflected on their transformative experience, stating, "The Indaba not only strengthened African AI but also enriched my personal and professional journey

in unimaginable ways". The Breakfast Mentorship Sessions were particularly praised, with one mentee noting, "Engaging with industry professionals over breakfast was both enlightening and inspiring". Many attendees were moved by the cultural night, describing it as "a celebration of Africa's rich diversity". From the collated feedback, one sentiment stands out: Deep Learning Indaba 2023 was more than just a conference; it was a community coming together, eager to shape the future of AI in Africa and the following blogs from a volunteer, sponsor participant and organisers are a testament to this.

Rate the Indaba overall	98.3% voted 4.5 stars
Did you learn new things?	100% voted yes
Did the Indaba help shape your ideas about future study/ career directions?	86.4% voted 4.5 stars
Did you network and meet new people?	91.5% voted 4.5 stars
Rate the usefulness and your engagement with our sponsors (at their booths or elsewhere).	91.5% voted 4.5 stars

Indaba Donors and Partners

UNIVERSITY OF GHANA
DEPARTMENT OF ECONOMICS

AIMS

Google DeepMind

Google

OpenAI

Hopper-Dean
Family Foundation

LELAPA AI

InstaDeep™

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JPMorgan CHASE & Co.

DAIR

NEURAL INFORMATION PROCESSING SYSTEMS

The MIT Press

DSNai

NVIDIA.

TONY BLAIR INSTITUTE FOR GLOBAL CHANGE

Additional Images

2023 Volunteers

2023 Organisers

General photos: Day 1

Day 2

Day 3

Day 4

Industry Demos/Talks

Hosts: Antony Ndolo & Daphne Tatenda

Day 5

Day 6

Day 7 – closing ceremony

Yebetumi

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Deep Learning Indaba 2023