DSA
Data Science Africa

DSA
STRATEGIC PLAN
2024 - 2028

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Executive Summary

In the years since the first Data Science Africa summer school and workshop in 2015, DSA has grown and achieved several milestones, including events in eight African countries - Kenya (2015, 2018, 2024), Uganda (2016, 2020), Tanzania (2017, 2022), Nigeria (2018), Ethiopia (2019), Ghana (2019), South Africa (2021), and Rwanda (2023) - offering visiting fellowships to young researchers, contributing to affiliated academic institutions, supporting the establishment of local chapters of DSA across Africa, and providing grant support for early career and junior researchers.

This strategic plan aims to guide the next five years of DSA's growth as the organisation seeks to augment the contribution to the African data science community.

DSA has identified five major strategic themes which will guide activities including capacity strengthening, resource mobilisation, and the growing of the African data science community that DSA shall implement by engaging with multiple stakeholders.
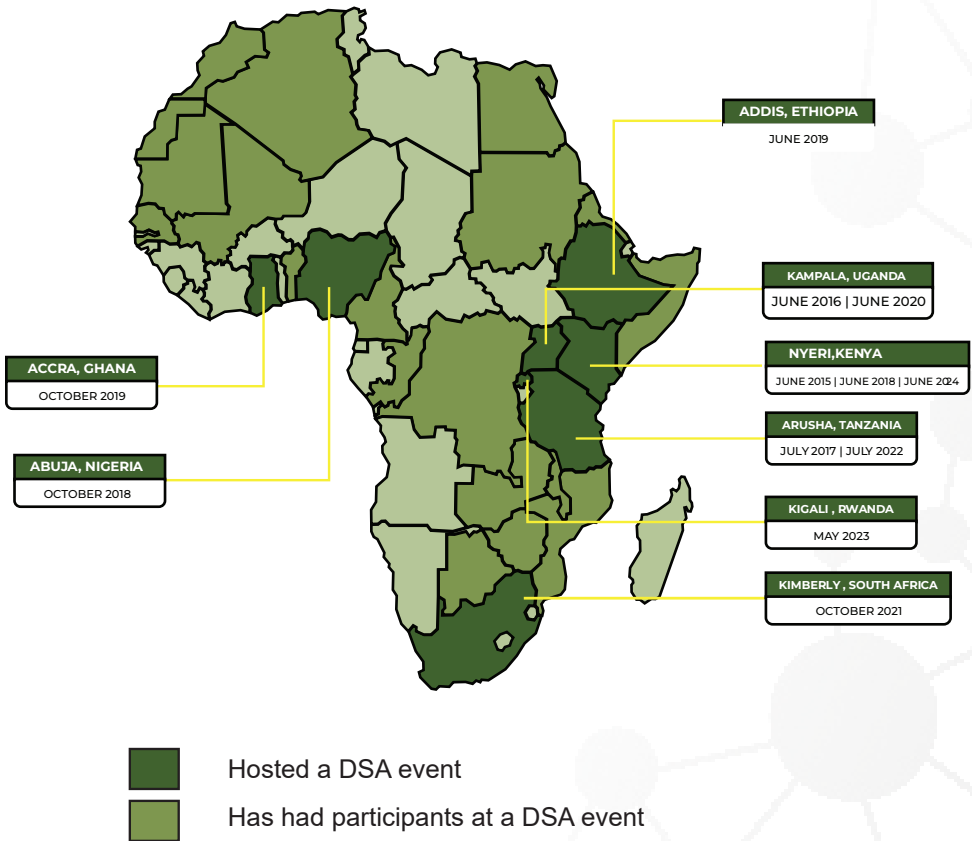
Introduction

Data Science Africa (DSA) is a grassroots organisation that was founded in 2015 to provide quality training in data science, machine learning, and other emerging technologies with the aim of leveraging these technologies for the development of solutions to African problems.

DSA bridges the gap whereby students at African universities had limited exposure to cutting-edge machine learning and data science. In addition, there were very few events in Africa at which research aimed at developing solutions to African problems using data science was presented.

The first **DSA summer school and workshop event** held in Nyeri at Dedan Kimathi University of Technology in 2015, established the format that would be adopted for subsequent DSA events - a summer school during which participants are trained on the theory and practice of machine learning, followed by workshops during which researchers present work that leverages data science to solve problems of interest in the African context.

At the time of writing, 11 of these capacity-strengthening DSA events have been held in 8 African countries. Between 2015 and 2017, all DSA events were held in East Africa, therefore, in a bid to broaden DSA's reach to the entire African continent, DSA held the first West African event in Abuja, Nigeria in 2018, followed by an event in Ghana in 2019. Further, during the COVID-19 pandemic, DSA held an online event organised and hosted by Sol-Plaatje University in South Africa, and most recently, in 2023, DSA held an event in Kigali, Rwanda.

ADDIS, ETHIOPIA
JUNE 2019

KAMPALA, UGANDA
JUNE 2016 | JUNE 2020

NYERI, KENYA
JUNE 2015 | JUNE 2018 | JUNE 2024

ARUSHA, TANZANIA
JULY 2017 | JULY 2022

KIGALI , RWANDA
MAY 2023

KIMBERLY , SOUTH AFRICA
OCTOBER 2021

ACCRA, GHANA
OCTOBER 2019

ABUJA, NIGERIA
OCTOBER 2018

Hosted a DSA event

Has had participants at a DSA event

To date the DSA events have reached approximately 1,000 data science practitioners and researchers from all over Africa.

DSA's success has been built on the following core tenets:

By Africa, Student Focus, About Solutions, Sustainable and Inclusive, and **Agile.**

These core tenets have led to the development of several additional programs reflecting DSA's commitment to the growth of the African data science community.

In addition to the training offered at DSA events, DSA has recognised the need to support young African researchers with funding to develop their ideas. In 2020, the **DSA Research Awards** was launched providing grants of USD 10,000 each to 10 research teams. This was followed in 2022 by the African AI Research Award, which offered 21 research grants to both early career researchers and junior researchers. Many of the recipients of these research grants have gone on to obtain larger grants enriching the African data science community by providing examples of problem solving in Africa by Africans.

The **DSA Visiting Fellowship Program,** first piloted in 2021, is an initiative that aims to provide support for a researcher to spend time at an established data science lab to conduct research in an area of interest to both the student and the host institution.

Another key strategic initiative is the creation of **local chapters** which aim to broaden DSA's geographical reach and to provide data science researchers and practitioners with opportunities to obtain support from colleagues in their own countries. This program has been successfully piloted with the launch of **DSA Uganda Chapter** in 2022.

This strategic plan defines the roadmap for the next five years of DSA activities building on current successes.

Purpose, Vision, and Core Values

DSA

PURPOSE
To empower a community of practitioners and enthusiasts in data-centric technologies for African solutions

VISION
To be a provider of training in data-centric technologies recognised continentally as a badge of excellence among all stake holders

Openness and Inclusivity
DSA is a welcoming and nurturing community that aims to help members of the data science community achieve their goals

Pragmatic
We aim to use data science to solve problems relevant to the African context

CORE VALUES

Sustainability
DSA programs are designed to last and use resources prudently to ensure members of the community benefit

Community
Our goal is to create a strong community that promotes the wellbeing of its members

Agility
We respond to challenges effectively to ensure our mission is achieved

Strengths

▸ DSA relies heavily on its members that are very enthusiastic about data and share a common belief that Africa's problems can and should be solved by Africans.

▸ DSA draws experience from academia and industry, members continue to push the envelope by employing cutting edge data science technology and are thus highly motivated and productive.

▸ Experience instills a deep-seated respect for processes and procedures within DSA's operations. Additionally, the extensive network comprising the DSA community, advisory board, and board members fosters enthusiastic participation, and reinforces DSA's unique qualities of simplicity, depth, and effectiveness.

Opportunities

- ‣ DSA can harness several opportunities, beginning with the numerous African data science communities that have caused many organisations to increasingly appreciate data-based decision-making. Executives and decision-makers are increasingly recognising the potential of data technology for their organisations. Consequently, these organisations will need to strengthen their data analytics capabilities.

- ‣ African universities offer the platform to nurture mathematics and statistics, encouraging students to pursue careers in data science. DSA can leverage this platform to tap into this substantial youth potential that remains largely unexplored and unsupported.

- ‣ Further, through partnerships with public and private entities, DSA can lead the way in developing and implementing data science solutions. This can assist in sustainability efforts for DSA, its local chapters, and communities.

- DSA can also make deliberate efforts to identify and explore synergies with contemporaries. Through these strategic partnerships and collaborations, including those that fail to advance, DSA can quickly identify its unique value proposition and advance DSA reach where the most traction is achieved.

- Also, DSA recognises a natural niche in the provision of advisory services on the emerging legal challenges in data privacy and protection, Intellectual Property Rights (IPR) and AI ethics.

- Finally, there exists a significant opportunity, being a hybrid-first organisation, in the delivery of DSA events online to expand the level of participation and the geographical reach.

Resource Mobilisation

To achieve DSA's goals, consistent and adequate funding is needed to support programs and operations. Since 2015, DSA has relied on a small number of consistent funders that have identified with DSA's mission. The plan is to develop a fundraising strategy that aims to grow and diversify the funding pool.
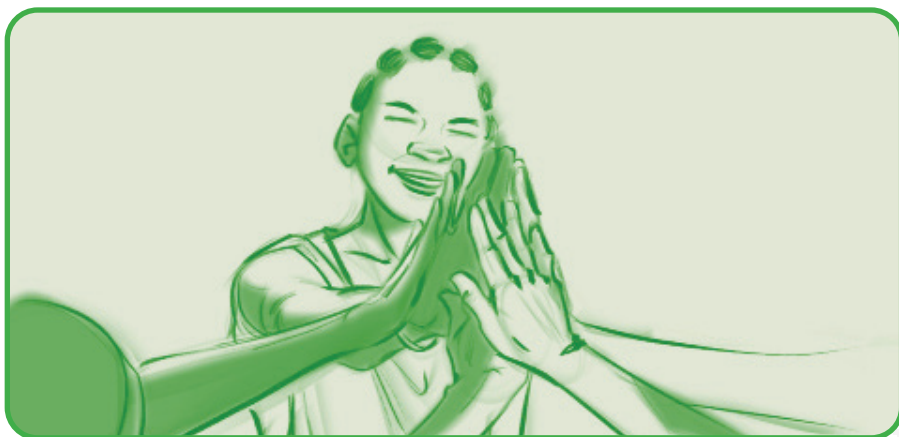

To meet this goal DSA will:

1. Carry out a **new funder mapping** exercise to identify potential funders and craft specific value propositions

2. **Actively engage current funders** and ensure to keep them updated on DSA activities by producing and sharing annual reports

3. Consistently write **grant proposals** in response to open calls and when solicited by prospective funders

4. 'Map, select and implement **service offerings** that diversify funding streams, and that absorb operational overheads

DSA Event Participants, Data Science Communities and Local Chapters

DSA is a community organisation which exists to empower DSA members. DSA has reached approximately 1,000 participants since 2015 and aims to grow and consolidate this number.

To meet this goal, DSA will:

1. Map and engage potential **data science community champions** (geographically and linguistically)

2. Develop and implement a **framework for community establishment**

3. Continuously conduct **tracer studies** of past DSA events participants (develop a database of past participants)

4. Engage **strategic partners** in francophone Africa

5. Implement an **outreach program**

Capacity Strengthening

At the heart of DSA is the strengthening of capacity for research, innovation and solution development using data science. DSA therefore aims to; expand training programs with respect to variety and target groups, develop capacity to offer advisory services, strengthen research support for DSA members, and seek avenues to apply data science skills in addressing Industry needs.

To meet this goal DSA will;

1. Hold and continuously improve **annual DSA summer school and workshop events**

2. Develop **niche curricula for data science training**

3. Develop **advisory service offerings**

4. Sustain and grow **research grant programs**

5. Develop **data centric solutions** for industry

DSA Culture

DSA aims to develop a unique identity that will inculcate a differentiated DSA culture.

To meet this goal DSA will:

1. Develop the **DSA lexicon**

2. Define and implement a **unique culture of DSA**

3. Develop and implement a **value proposition** for DSA (to all stakeholders)

4. Develop a **communication strategy** geared towards improving DSA's visibility

Organisational Capacity

To date DSA has operated in a lean fashion that has enabled it to meet its goals in a sustainable manner. This has required an overlap of the oversight, management and execution functions. DSA now aims to redefine the organisational structure and executive functions necessary to execute this strategic plan.

To meet this goal DSA will:

1. Define, form and operationalise **committees of the board**

2. Define, form and operationalise functional **organisational units**

3. **Recruit** suitable people to these functional units or engage qualified consultants

4. Define the role of the **advisory committee** and engage additional members to provide guidance in strategic themes

5. Review, validate and operationalise existing **policies** and develop new ones as required

6. Develop and implement a **sustainability strategy**

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