

# DATA SCIENCE INTERNSHIP HANDBOOK

**HAMOYE**



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# 1.0 Welcome to Hamoye



At Hamoye, we prepare young professionals and college interns for their chosen careers and the future of work.



It is a known fact that getting the first professional job, post-college education is universally challenging. Depending on the country, it may be the most difficult challenges young graduates will ever face. Whether one is successful at it or not could determine the course of one's life. This is where Hamoye comes in. We offer world-class, specially designed, internship-style learning programs, to help prospective interns acquire real-world work experience.

Our internship programs simulate the real work environment while cutting out all of the unnecessary distractions that come with traditional internships. Not only do we have the capacity to provide everyone with an opportunity to acquire job-ready expertise, we have the special sauce to ensure our interns get the best out of the experience. Also, interns will work alone and with peers, in a fast-paced, competitive environment, to keep them motivated throughout their choice program. Our internships are offered year-round and involve:



Specially designed short courses with real-world projects to introduce interns to the tools they need to stand out



Exposure to industry experts via webinars



Career coaching



Capstone project with peers.

Our Social Learning Management Platform ([hamoye.com](http://hamoye.com)) is designed to help interns participate from anywhere in the world, track their accomplishments, and showcase themselves to potential employers.

# MISSION



To jumpstart desirable careers for millions of people all over the world and develop an army of problem solvers for the world. We are a tech startup, founded to help young professionals acquire in-demand expertise by redesigning how internships work.

# 2.0 Internship Structure



Hamoye Data Science Internship is a 4-month remote internship program targeted at individuals who wish to start a career or advance their skills for rapid career development in Machine Learning and data science. Interns will learn the rudiments of machine learning, coding, statistics, and models for data science. Participants will be required to progress through a 6-sprint competition, each lasting 2 -3 weeks. Each sprint has a pre-set training curriculum and a real-world use case challenge.

At the end of this internship, interns will apply skills they learned to collaborate and provide data-centric solutions to real-world problems. For instance, interns can use a dataset to build a machine learning model. It is expected that interns who enrol in this option already possess basic programming skills.

## ADMISSION REQUIREMENTS

This internship is open to everyone - professionals and students in higher institutions who are ready to commit the time and effort to scale the rigorous program- no entrance exam required.

# 3.0 Program Tracks



Hamoye Internships are structured into three tiers as follows:

- Data Storytelling
- Data Science
- MLOps/Data Engineering

## Data Storytelling

Data storytelling is the practice of building a narrative around a set of data and its accompanying visualizations to help convey the meaning of that data in a powerful and compelling fashion. Turning data from neutral fields in a database into opinions, arguments and insights, has over the years become a big deal. With the tutelage provided by Hamoye in this internship, your visualization, data narrative, data interpretation and manipulation, technical writing skills, etc will be sharpened. You'll learn to do these using tools such as Microsoft Power BI, Tableau, Python libraries such as seaborn, matplotlib, plotly, GGplot etc.

## Data Science Internship

The data science training is efficacious in raising the next generation of world class data scientists. From learning about the Python programming language and the libraries such as numpy and pandas, used to build machine learning algorithms, to learning the nitty-gritties of building a model, testing its accuracy and making informed decisions from datasets.

## MLOps / Data Engineering

The data engineers to be trained in this internship will compete on the stage with the big guys in the big tech industries in the world, preparing the “big data” infrastructure to be analyzed by Data Scientists. We will get you acquainted with tools such as Kubeflow, Kubernetes, Micro K8, etc. You'll be able to deliver to handle big data, cloud activities, build and deploy pipelines, containers etc

# 4.0 Internship Curriculum



The internship is a careful culmination of courses and projects designed to take interns from beginner to expert level in their respective tiers. Course curricula and projects have been designed with inputs from experts around the world. Each track has respective capstone projects, structured to allow interns to leverage all the knowledge and skills gained from the courses while working on their chosen projects with the guidance of professionals across the world. The projects will boost interns' portfolios and prove their job readiness to prospective employers.

## 4.1 Foundational Courses

Before the internship begins fully, interns will have the liberty to take some appetite-whetting courses as they prepare for the real deal. This module will expose interns to the basic programming language in data science and introduce them to the world of machine learning, some of the most important Python libraries, and the classification of machine learning problems. The courses in this module include:

1. Coding with Python using Google Colab and Anaconda,
2. Version control using Git,

Note that these courses are optional, as it is expected that every intern is already familiar with the concepts therein.

# 4.0 Internship Curriculum



## 4.2 Data Storytelling Courses

Stage  
**A**

### Introduction to Python for Machine Learning

Interns will learn machine learning techniques and how they can serve as an invaluable tool for solving one of the grand challenges posed to humanity such as Climate Change. Interns will work on cleaning, wrangling, exploring, providing summary statistics and interesting visualisations on a public utility data containing millions of rows and tens of files in structured format.

Stage  
**B**

### Becoming a Data Storyteller

In this course, interns will learn the basics of technical writing, and how to become technical writers. This course outlines and defines the technical writing process, best practices, and steps to launch their technical writing career.

Stage  
**C**

### Python Libraries for Data Storytelling

This course will teach interns the different python libraries such as seaborn, matplotlib, GGplot, plotly, etc. by building data storytelling projects.

Stage  
**D**

### Data Storytelling in Pattern Recognition

Interns will be exposed to the key components of Computational Thinking such as problem decomposition, abstraction, data visualization, and pattern recognition. Interns will decide to learn the course with either excel spreadsheet or python programming language.

Stage  
**E**

### Data Curation for Storytelling

This course will teach interns how to visualise data, observe trends, as well as tell a convincing story using data.

# 4.0 Internship Curriculum



## 4.3 Data Science Courses

Stage  
**A**

### **Introduction to Python for Machine Learning**

This course will expose interns to machine learning techniques and how they can serve as an invaluable tool for solving one of the grand challenges posed to humanity such as Climate Change. Interns will work on cleaning, wrangling, exploring, providing summary statistics and interesting visualisations on a public utility data containing millions of rows and tens of files in structured format.

Stage  
**B**

### **Regression in Machine Learning**

In this course, interns will develop a multivariate multiple regression model to study the effect of eight input variables on two output variables, which are the heating load and the cooling load, of residential buildings.

Stage  
**C**

### **Classification in Machine Learning**

In this course, interns will use provided datasets to classify and predict the quality metrics (qascore) of the ecological footprint data for the different countries. This data includes total and per capita national biocapacity, the ecological footprint of consumption, the ecological footprint of production, and total area in hectares.

Stage  
**D**

### **Neural Networks, Image Recognition, and Object Detection**

In this course, interns will explore the building blocks of neural networks, which are versatile, powerful, and scalable. Interns will learn how to use them to tackle complex problems like the use of convolutional neural networks for image recognition.

Stage  
**E**

### **Practical Time Series Analysis**

In this course, interns will explore and build time series forecasting models for measurements of electric power consumption in one household with a one-minute sampling rate over a period of almost 4 years.

# 4.0 Internship Curriculum



## 4.4 ML/Ops Data Science Courses

Stage  
A

### Introduction to Python for Machine Learning

This course will expose interns to machine learning techniques and how they can serve as an invaluable tool for solving one of the grand challenges posed to humanity such as Climate Change. Interns will work on cleaning, wrangling, exploring, providing summary statistics and interesting visualisations on a public utility data containing millions of rows and tens of files in structured format.

Stage  
B

### Regression in Machine Learning

In this course, interns will develop a multivariate multiple regression model to study the effect of eight input variables on two output variables, which are the heating load and the cooling load, of residential buildings.

Stage  
C

### Introduction to Kubernetes

This course explores what kubernetes is, its architecture and building blocks, how it can be run on our local system or in the cloud, different ways we can configure and protect sensitive information, and how one can let external applications access one's kubernetes application.

Stage  
D

### Machine Learning Operations with Kubeflow

In this course, interns will learn about the application of machine learning operations with kubeflow, how kubeflow can be used to make deployments of machine learning workflows on kubernetes simple, portable and scalable, resulting in faster release and lower operating costs.

Stage  
E

### Kubeflow components and Pipeline

In this course, interns will learn how to build kubeflow components and connect them in a pipeline. This course will also provide the basic knowledge of building machine learning pipelines using kubeflow.

# 4.0 Internship Curriculum



Each track will also include:

## Tag-Along Projects

Each course will be accompanied by a project assignment where interns will get the chance to utilize knowledge gained from a course to complete a project related to the course.

## Capstone Project

At the last stage of the internship (Stage F), interns will leverage what they've learnt throughout the internship to provide data-driven solutions to the greatest problems facing humanity. These capstone projects have been deconstructed to different challenges across many sectors. Every intern will be divided into groups and assigned two projects from the beginning of the internship, and will be opportune to present them to industry experts at the middle and end of the internship.

The internship across the three tracks will also offer-

- Webinars/ Moments with industry experts
- Access to amazing, top-notch courses
- Capstone Projects
- Career coaching and recommendations
- Publish your works on Hamoye blog
- Certificate of Graduation
- Membership of OneCV: Hamoye's exclusive job market
- Hamoye Fellowship
- Access to Hamoye AI Labs Faculty

# 5.0 Internship Timeline



**Table 1.0: Analyst Internship (Beginners tier)**

	Component	Period	Duration
1.	Onboarding/Orientation	Week 1	1
2.	Stage A	Weeks 2 & 3	2
3.	Stage B	Weeks 4 & 5	2
4.	Premiere Presentation	Week 6	1
4.	Short Break	Week 7	1
5.	Stage C	Weeks 8 to 9	2

# 5.0 Internship Timeline



Table 1.1: Hamoye Data Science Internship (Intermediate tier)

	Component	Period	Duration
6.	Stage D	Weeks 10 & 11	1
7	Stage E	Weeks 12 & 13	2
8.	Stage F Capstone Projects	Weeks 14 to 16	3

## 5.1 Capstone Projects

At the start of the program, interns can get a glimpse of the various projects that will be worked on by visiting our [blog](#). The capstone projects allow interns to leverage on what they've learnt, and provide data-driven solutions to some of the problems facing humanity. These capstone projects have been designed to address different challenges across many sectors. We are advocates of **learning by doing** since we believe that true mastery of any skill, especially something as practical as coding, comes through doing.

As a result, if interns are enrolled in any of Hamoye programs, they must be ready to get their hands dirty with work which will make refined experts out of them. Our interns in time past have testified to the efficacy of capstone projects, and their testimonies and experiences can be found [here](#) and [here](#).

# 6.0 How To Use the Hamoye Platform



Our Platform is uniquely designed to give our interns the best learning experience. Aside from solely being a learning management system, we have incorporated features that enable a holistic learning experience, consisting of study groups, chat boxes, and much more. It is important that interns first sign up on hamoye.com and then familiarize themselves with the platform before the start of the internship. The following has been prepared to help you enjoy your first time on hamoye.com-

- [See how to create an account on hamoye.com](#)
- [See how to take a course on hamoye.com](#)

# 7.0 Communication Channel



Communication is best done when it goes two ways. Interns will not spend 100% of the time studying materials, there will always be avenues for constructive conversations between them and the organisation.

The following channels will be used for the purpose of communication during the program: Hamoye platform discussion forum, email, Zoom, and Slack.



Zoom will be the official channel for all audio and video calls including webinars



Slack will be the interactive space for the course. We understand the importance of interaction, and this space is created with that in mind. interns are encouraged to interact with each other, and also with the Hamoye Team regarding any questions they might have. Different channels have been created to serve several purposes, and more may be created as the need arises.



Zoom/Youtube live stream will be the official channel for all audio and video calls including webinars



Hamoye.com: For each of the courses, there is a discussion button that allows interns to share ideas around concepts being taught, ask questions from their peers, and provide answers to questions.



Stay connected with us on social media in order to stay updated on recent happenings. We also take to our social media channels to celebrate outstanding interns. Visit [www.hamoye.com/social](http://www.hamoye.com/social) to follow us on social media.

# 8.0 Code of Conduct



The Code of Conduct aims to ensure that all Interns understand the standard of conduct required. Interns are expected to uphold the Code of Conduct at all times while learning, carrying out their duties and interactions.

## i. Expectations From Our Interns

Interns are expected at all times to:

A. Be Responsible: Carry out all their learning activities responsibly, safely, and in a competent manner. The primary responsibility is to learn, we expect interns to conduct themselves in a manner worthy of emulation, without being judgemental or biased. Avoid providing information to other Interns that are misrepresented or falsified. Inform the Hamoye Team Representative to follow up with professional advice.

B. Be Respectful: Respect other Interns and honour their integrity without prejudice to economic status, abilities, race and customs, cultural and religious needs.

C. Be Present: Attend all learning activities i.e Projects, Webinars, Weekly Coding Clubs, and Slack Engagements diligently; if indisposed, interns should inform community members, then the Hamoye Team Representative as early as possible. Avoid abandoning learning abruptly, especially during the periods of assigned group responsibilities, as this will have a negative effect on the learning outcome i.e grades, of the other group members. Should there be an absolute need for abrupt withdrawal from learning, interns should inform the representatives of the Hamoye Team before leaving.

D. Be Discerning: Behave in the most appropriate or desirable manner while learning, such that liabilities will neither be created, nor Hamoye disreputed. Avoid engaging in activities or actions that will bring any harm (physical or mental) to a person or property. Exercise discretion in extending help, especially in monetary terms beyond the scope of their learning, or seeking/accepting rewards, benefits, or gifts without authorisation.

## ii. Protection of Confidential Information

All information confidential to Hamoye, especially the personal data of interns, must not be disclosed or used for any other purposes unless absolutely necessary to help our interns learning experience with Hamoye. It is advisable to check with the Hamoye Team Representative or the Data Protection Officer at [hello@hamoye.io](mailto:hello@hamoye.io) if there are any queries or doubts. Photographs and videos are considered personal data of the person photographed or filmed. If an Intern would like to take photographs or videos of other Interns, consent must be sought from them in a private and personal arrangement. As an Intern, you must destroy all copies of the name list and any documents comprising personal data of other Interns, and all other confidential information of Hamoye immediately after their learning ends.

# 8.0 Code of Conduct



## iii. Conflict of Interest:

Interns are not expected to:

- Assume learning with other organisations. Having other personal commitments, or situations that will give rise to a conflict of interest in the period of your learning with Hamoye.
- Use or allow others to use Hamoye's Name, property, resources, information, or funds for any purpose other than that required for their learning activities.
- Act as a spokesperson for Hamoye unless prior permission or authority has been granted.

## iv. Do's And Don'ts

This section contains the allowed and disallowed conducts and expectations from our Interns.

### Do's

As an Intern, you are required to:

- Be aware that you will be identified with Hamoye, hence, it is required of you to understand the mission and core values of the organisation
- Be punctual for your learning activities and engagements
- Lead by example and be good role models for other interns
- Be mindful of interns who are overly-friendly or attention-seeking. Maintain appropriate behaviour and prevent having any otherwise contacts with other Interns.
- Maintain confidentiality and respect the privacy and dignity of other Interns.
- Respect the feelings of other Interns.
- Splurge on lots of encouragement and praise, by regarding and celebrating the talents and achievements of other Interns.
- Instil independence and self-confidence by providing guidance to other Interns to complete their tasks by themselves, rather than doing things for them.
- Consult Hamoye Staff when in doubt
- Give compliments or feedback to Hamoye staff on positive or adverse encounters while learning
- Report immediately to the Hamoye Team Representative, should you be aware of any information from other Interns that is of potential threat or harm to interns and/or others.

# 8.0 Code of Conduct



## Don'ts

As an Intern in the Hamoye programs, the following are considered as prohibited;

- Soliciting sales or promotion of services of any kind on our platforms.
- Stepping in to take over tasks, assignments, and projects given to other Interns for monetary purposes or otherwise.
- Making empty promises or giving any form of monetary or material reward to other Interns without first consulting the Associate in charge of the Hamoye Team.
- Verbally, emotionally, or physically abusing the interns, especially using profanities or derogatory remarks.
- Uploading Interns' photograph to an online platform, including websites, blogs, or any form of social media without prior permissions from people in the photograph.
- Sharing information about the Interns and Hamoye with others, unless for promotional purposes.

# 9.0 Frequently Asked Questions



Let's take a look at some of the questions that frequently popped up in our build-up to this Internship.

## **What does HDSC2021 mean?**

HDSC is an acronym for Hamoye Data Science Cohort Internship 2021

## **Is the internship free?**

Absolutely free. We are not charging a fee.

## **Who can apply?**

The Data Science internship is designed for data science professionals in beginner, intermediate and advanced levels. It is designed not only to spur the journey of participants towards becoming beginner, intermediate or advanced Data Practitioners but also to advance and strengthen the existing talents in the field of data science supported by career coaching webinars, instructors, mentors and Hamoye platform.

## **How's the Hamoye internship program different from other programs?**

Hamoye Internship offers unique opportunities for interns that simulate exact activities in a corporate environment. You will work on real-life projects with your peers across the world, you will attend webinars conducted by experts in the data science and machine learning fields, unblocking sessions from Hamoye faculty, certificates of completion, and lots more. The internship handbook explicitly explains the internship structure

## **Can I defer from one cohort to another?**

No, one cannot. In any case you are expected to re-register for the next cohort and start the application process again, as failing to start the current will be an absolute withdrawal of one's application.

## **Will a certificate be issued to me at the end of the program?**

After you have successfully completed a course on hamoye.com and score a minimum of 60%, you will be offered a certificate of competition for that course. The certificate can be downloaded from the Hamoye platform. At the end of the internship however, you will be awarded a certificate of completion of the Hamoye Data Science Internship, so long as you fulfil the requirements for this.

## **Through what media will the courses be taught?**

The course materials will be delivered in various forms on the Hamoye web app. The course will be largely delivered in scripts, a bit in videos, and one-one interactions with the Hamoye team.

# 9.0 Frequently Asked Questions



## How does community engagement work on slack?

After your registration process is completed, you will be added to a Slack workspace via your email address (kindly ensure a valid email address is provided). We typically throw a virtual party before we get serious with learning. Our programs coordinator will send in timely details and information pertaining to the internship via the slack channel and all interactions and engagements between all our Interns are carried on within this confines. Once the internship begins and you have been assigned to your group, you can then begin to enjoy learning with the community.

## What materials would I need to be a part of the learning process?

The course will be delivered in an e-learning style. Hence, a good internet connection and a reliable device (phone, tablet, desktop, laptop) are essential for learning.

Sometimes I have trouble learning new stuff, especially when I have to read it up on my own.

## What can I do to help myself?

Believe it or not, Hamoye has these all planned out. There is no cause for worry. Experts will consistently be in touch with you during the internship to guide you through the courses and the project. The Analyst and Data Science internships have two delivery styles- Tutored and Self-learning. Feel free to choose any that works for you.

## Will there be chances to work on any real projects?

What's a data scientist or a machine learning expert without real-life project experience? From the start of the internship, interns will be able to choose from a plethora of projects on Hamoye website, and about a 4-week timeline will be allotted to work on the project, with peers or independently, which will be judged by a group of experts across various sectors

## How do I know the capstone project I will be working on?

The Hamoye platform is replete with diverse projects across various sectors. At the beginning of the internship, together with your group, you will choose at least two projects which you will work on and present to industry experts at the middle and end of the internship,

## What is the duration of the internship?

The internship will run for four months and 6 sprints

## How much will successful candidates earn after the internship?

Target remuneration for selected candidates after the program:

Entry level: from NGN 140,000 per month.

Senior Scientist/Engineer: from 320,000 NGN per month.

## How many tracks exist in the internship?

The internship is divided into three tracks:

- Data Science
- MLOps/Data Engineering
- Data Storytelling

# 9.0 Frequently Asked Questions



## **Can I choose more than one track?**

You are expected to select only one track.

## **How many stages are in the program?**

Participants will be required to progress through an 8-sprint competition, each lasting 2 to 3 weeks.

## **Will I be paid monthly during the duration of the Internship?**

Participants will not be paid monthly for the duration of the program. Although, the top participants from each sprint and track will be declared sprint winners. Sprint winners across all 6 sprints will receive awards to help defray the costs of mobile data.

## **How many hours am I expected to devote for the internship?**

The number of hours to be devoted for the internship is subjective and based on your current level of expertise. As a beginner, it is expected that you devote at least 35–40 hours per week due to the rigorous nature of the program.

## **What do I tend to benefit from the Data Science internship?**

- Every participant has the opportunity to learn using a pre-set training curriculum, connect, collaborate and build a real-world use case.
- Every participant who successfully completes a sprint and the associated challenge will earn a certificate from Hamoye for each sprint completed.
- Participants will have an opportunity to work on a unique AI open-source project.
- The top participants from each sprint will be declared sprint winners and awarded prizes
- Finalists will be invited to join Hamoye AI Labs or our partner companies across the world.

## **How can I register for the internship?**

Call for applications will be announced periodically on our website and social media handles. Kindly visit [www.hamoye.com/social](http://www.hamoye.com/social) to follow us on social media.

# Contact Us



We love to hear from you. Please reach out to us via any of the following platforms:



[www.hamoye.com](http://www.hamoye.com)



hello@hamoye.io



[HamoyeHQ](#)



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