WASHA (Working on Applications for Data Science and Health in Africa) Takwimu
Swahili for Ignite Data

Research Training on Harnessing Data Science for Global Health Priorities in Africa (DSI-A) training program

Statistical Computing: A short course in methods with a focus on Health Data Science

Dates: Monday, 15th April – Friday, 19th April 2024

Venue: Gateway Hotel (https://www.thegatewayhotel.co.za/)
Cnr Centenary Blvd & Twilight Dr, Umhlanga Ridge, Umhlanga, Durban, KwaZulu Natal

Course website: https://schdscourseukzn.github.io/

Contact:

Course content:

Programme Director:
- Professor Henry Mwambi: MwambiH@ukzn.ac.za

Course Facilitators:
- Dr Mohanad Mohammed - MohammedM1@ukzn.ac.za
- Dr. Gabriel Kallah-Dagadu - KallahDagaduG@ukzn.ac.za

Admin: Centre for Rural Health Team
- Themba Manqele - Manqelet@ukzn.ac.za

Course Description

Unprecedented advances in digital technology during the second half of the 20th and beginning of the 21st centuries is transforming science, including health and biomedical research. Scientific fields that have traditionally relied upon simple data analysis techniques of smaller datasets have been transformed by technologies that continue to expand the possibilities of observing and deciphering massive amounts of data in an unprecedented way. This course includes concepts from Statistics, Computer Science and Software Engineering. We will learn the necessary skills to clean, visualize, and analyze data in a reproducible way.

Pre-Requisites

- Completed the Bootcamp in R.
- Completed the assignments from the bootcamp.

Learning Objectives

At the conclusion of this course, the participant will be able to:

1) conduct data wrangling and cleaning in order to construct an informative, manageable data set;
2) organize data analyses and make these analyses sharable and reproducible;
3) perform exploratory data analysis to generate hypotheses and intuition about the data;
4) communicate results through visualization, stories, and interpretable summaries

INSPIRING GREATNESS

Programme:

	Monday, 4/15		Tuesday 4/16	Wednesday 4/17	Thursday 4/18	Friday 4/19
8:00 – 9:00 am	Arrival and Registration Pre-Survey		Arrival and Registration	Arrival and Registration	Arrival and Registration	Arrival and Registration
9:00-10:30 am	9:00 – 9:10	Introduction to course	String Processing	Introduction to ggplot2	Maps	Swine Flu case study (Project)
	9:10 – 9:40	Pre-knowledge test				
	9:40 – 10:30	Data wrangling*				
Facilitators	Dr. Gabriel Kallah-Dagadu		Dr. Mohanad Mohammed	Dr. Mohanad Mohammed	Dr. Mohanad Mohammed	Participants
10:30-10:45 am	Break		Break	Break	Break	Break
10:45-12:00 pm	Reshaping data, combining tables		String Processing	Visualization principles	Vaccines case study	COVID-19 case study (Project)
Facilitators	Dr. Gabriel Kallah-Dagadu		Dr. Mohanad Mohammed	Dr. Gabriel Kallah-Dagadu	Dr. Gabriel Kallah-Dagadu	Participants
12:00-1:00 pm	Lunch		Lunch	Lunch	Lunch	Lunch
1:00-2:30 pm	Advanced data wrangling, Dates, Times, web scraping		String splitting	Visualization principles continued	Vaccines case study	Presentations and Discussion*
Facilitators	Dr. Mohanad Mohammed		Dr. Gabriel Kallah-Dagadu	Dr. Gabriel Kallah-Dagadu	Dr. Gabriel Kallah-Dagadu	
2:30-2:45 pm	Break		Break	Break	Break	Break
2:45-4:00 pm	Practical		Practical	Practical	Practical	Closing Ceremony, 6pm closing dinner

INSPIRING GREATNESS