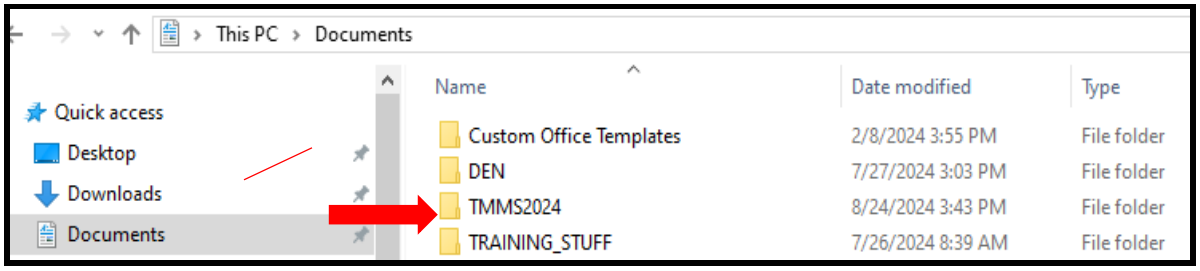
Dear Participants,

Thank you for registering for the workshop! The repository on Github has files for the source, data and other important materials.

- Github Folder where files for the source, data and other important materials are stored

- Download the files > Open documents location and create a new folder by the Name: 'TMMS2024'
- Copy the files into the "TMMS2024" folder



- Google Document where participants will place their examples from the session.

Regards

Organizing Committee

Website: https://ammnet.org

Website: https://www.chuka.ac.ke

Website : https://fast.chuka.ac.ke/event/training-on-malaria-modeling/

Preparation for the Workshop:

- **Data:** Please we will provide data for the training but feel free to bring any other malaria datasets (in CSV format) you have previously worked on.

- **Laptop Requirement:** Ensure your laptop (core i3 and above) is pre-installed with the latest versions of R (4.4.1) and R Studio to facilitate participation in training.

- ❖ Download the latest version of R, for Windows at: https://cran.r-project.org/bin/windows/base/
- ❖ Download RStudio at : https://posit.co/download/rstudio-desktop/
- ❖ Install the following packages:

```
Caret, psych, ggplot2, caretEnsemble, tidyverse, mlbench, flextable, mltools, tictoc,
ROSE, smotefamily, ROCR, pROC, e1071, class, caTools, MASS, ISLR, boot, cvTools, sjmisc,
psych summarytools,
```

- **Reading Materials:** To maximize the benefit of this workshop, we highly recommend reviewing the following literature before attendance:

1. *Muriithi, D., Lumumba, V. W., Okongo, M. (2024).* A Machine Learning-Based Prediction of Malaria Occurrence in Kenya. *American Journal of Theoretical and Applied Statistics, 13(4), 65-72.* *https://doi.org/10.11648/j.ajtas.20241304.11*

2. *D'Abramo, A., Rinaldi, F., Vita, S., Mazzieri, R., Corpolongo, A., Palazzolo, C., ... & Nicastri, E. (2024).* *A machine learning approach for early identification of patients with severe imported malaria*. *Malaria Journal, 23(1), 46.*

3. *Lee, Y. W., Choi, J. W., & Shin, E. H. (2021).* *Machine learning model for predicting malaria using clinical information*. *Computers in biology and medicine, 129, 104151.*

These readings will provide you with a solid foundation in the principles and practices of handling imbalanced data, particularly in the health sector, and enhance your understanding of the machine learning techniques that will be explored during the workshop.

Regards

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Applied Malaria Modeling Network

DAY ONE 29/08/2024 (THURSDAY)		
8.00 – 9.00am	Registration	Secretariat/ Dr. Alice Lunani
9.00 – 9.20am	Self-Introduction – Networking	Dean, FSAT Chuka University
9.20 – 9.40am	Welcome Remarks AMMnet mission and vision, aim of the event and welcoming new members to AMMnet Kenya Chapter.	Dr. Mayeku Phillip (AMMnet Chairman, Kenya Chapter)
9.40 – 10.10am	Opening Remarks – Official Welcome	VC Chuka University
10.10 – 10.40am	Health Break, Networking and Photography session	Catering Department/ Dr. Alice Lunani
10.40 – 11.00pm	Overview of different types of Models (Dynamical, Geospatial and Genomics Modelling)	Dr. Mark Okongo
11.00 – 1.00pm	Introduction to R software and Data Visualization	Prof. Dennis. Muriithi
1.00 – 2.00pm	Lunch Break, and Networking	Catering Department/ Dr. Alice Lunani
2.00– 3.30pm	Computational Malaria Modelling Techniques in Machine Learning Algorithms using R.	Dr. Mark Okongo Prof. Dennis Muriithi
3.30– 5.00pm	Practical/ Exercise	Prof. Dennis Muriithi
DAY TWO 30/08/2024 (FRIDAY)		
8.30 – 9.00am	Registration	Secretariat/ Dr. Alice Lunani
9.00 – 11.00am	Malaria Modelling Techniques in Machine Learning Algorithms in R & Rstudio using NMCP data	Prof. Dennis Muriithi Dr. Mark Okongo
11.00 – 11.30am	Health Break, Networking and Photography session	Catering Department/ Dr. Alice Lunani
11.30– 1.00pm	Development/Formulation of Compartmental Models	Dr. Mark Okongo
1.00 – 2.00pm	Lunch Break, and Networking	Catering Department/ Dr. Alice Lunani
2.00 – 3.30pm	Simulation and Validation of Compartmental Models in R Using NMCP data	Dr. Mark Okongo
3.30 – 4.30pm	Integrating a Compartmental Model into a Shiny App with R software	Dr. Mark Okongo
4.30 – 4.35pm	Evaluation of the training – Online survey tool	Dr. Alice Lunani
4.35 – 5.00pm	Closing Remarks	DVC (ARSA)
5.00pm	Departure	

$500 to $3,000 for local in-person AMMnet events to build community

For example:

- Scientific talks, poster presentations
- Panel discussions, question & answer sessions with experts
- Hands-on technical workshops or hackathons
- Small-group manuscript or grant proposal feedback discussions
- Career panels, career development activities
- Facilitated group discussions on technical topics or developing plans for local AMMnet chapters
- ...and more!

AMMnet small event grants

Applications accepted in English, French, or Portuguese

http://ammnet.org

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