

Daha Hussein

lia || Bioinformatician || Molecular Biologist || Science Data Analyst *President IVSA Somalia*

Education

2018–2024 **Bachelor of Veterinary Medicine**, *Somali National University*, Mogadishu, Somalia, *CGPA: 4/4*

Undergraduate Thesis: “Breeding objectives and practices in four local cattle breed production systems in Somalia with implication for the design of breeding programs”.

Supervisors:

- Dr. Abdirahman Ali
- Dr. Shafi'i Abdullahi
- Associate Professor Peter Thomson

Research Interest

- Feline Nephrology research
- Machine learning applications (deep learning in particular) for mass spectrometry and Next-Generation Sequencing data
- Genomics and Transcriptomics
- Structural Bioinformatics

Research Experience

2022–Present **Undergraduate Research Assistant**, *Veterinary Research Laboratory, Somali National University*

Supervisor: Dr. Shafi'i Abdullahi

- Utilized cutting-edge laboratory equipment, such as the PCR machine, spectrophotometer, centrifuge, and automated pipetting system, to conduct advanced diagnostic tests and analyses on animal samples for the research project “Investigating the Genetic Markers of Disease Resistance in Livestock.”
- Employed state-of-the-art techniques and protocols while operating high-quality machines like the DNA sequencer and flow cytometer for the research project “Characterizing Immune Cell Populations in Feline Immunodeficiency Virus (FIV) Infection.”

Professional Experience

2022–2023 **Research Assistant**, *National Health Institute of Somalia*

- Conducted literature reviews and assisted in the development of research proposals and protocols for studies related to public health issues in Somalia.
- Collected and analyzed data using rigorous scientific methods and advanced statistical techniques to contribute to evidence-based decision-making in healthcare policies and programs.
- Collaborated with multidisciplinary teams of researchers, epidemiologists, and public health professionals to design and implement research studies aimed at addressing key health challenges in Somalia.

Workshops/Conferences/Webinars

- A seminar on One Health in Somalia held by One Health Center at Abrar University 2021.
- A virtual seminar on introduction to statistics and R program held by the University of Sydney and Somali National University 2021.
- A seminar on HACCP and SOP held by Somali National University Faculty of Veterinary Medicine and Animal Husbandry 2022.
- A virtual conference on antimicrobial chemotherapy held by GARDP 2023.

Mogadishu, Somalia

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Professional Memberships

- Member, International Veterinary Student Association (IVSA) 2022-Date
- Member, Massachusetts Veterinary Technician Association 2021-Date
- Member, Somali Animal Welfare Society (SAWS) 2020-Date

Certifications

- Measuring disease in epidemiology by Imperial College London
- Study designs in Epidemiology by Imperial College London
- Python for data science, AI and development by IBM
- Introduction to probability and data with R by Duke University

Awards and Grants

- Title: Breeding objectives and practices in four local cattle breed production systems in Somalia with implication for the design of breeding programs (2023)
- Source: Somali National University
- Funding: \$15,000

Bioinformatics Skills

- NGS data analysis of DNA-seq, DNA methylation, ChIP-seq, RNA-seq, scRNA-seq, Single-cell ATAC-seq
- Bioinformatics software and tools: Familiarity with a range of bioinformatics software and tools, including but not limited to: BLAST, Bowtie, BWA, SAMtools, GATK, IGV, MACS2, SICER, Cufflinks, STRING, and UCSC Genome Browser, DESeq2, edgeR, Enrichr, Monocle.

Statistical Skills

- Programming languages: Python (Pandas, Numpy, H5py, Tensorflow, Biopython, Scikit-learn), R (tidyverse, limma, deseq2, msstats), Shell/Bash Scripting
- Machine Learning: Data Preparation, Feature Engineering, Data Modeling, Performance Measurement
- ML Models: Linear Regression, Logistic Regression, K-Means Clustering, Decision Tree, Random Forest, Support Vector Machine, Naive Bayes Classifier, K- Nearest Neighbors, Non-negative matrix factorization, PCA and t-SNE
- Deep learning models: CNN, RNN and ANN

Research and Publication

- Excellent Scientific Research ability with knowledge of APA and MPA referencing styles
- Excellent written and verbal communication skills
- Excellent abilities with Ms and Google Docs

Other Skills

- People management and organizational skills
- Decision making
- Teambuilding & Staff Supervision
- Ability to communicate (Oral and Written) in English

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Leadership and Activities

- 2023–Present **President**, *International Student Veterinary Association Somalia*, Mogadishu, Somalia
- Spearheaded the establishment of the International Student Veterinary Association Somalia chapter, fostering a supportive community for veterinary students and facilitating knowledge exchange through seminars, workshops, and collaborative projects.
 - Advocated for the interests and professional development of veterinary students by organizing networking events, internships, and educational opportunities, strengthening ties with international veterinary associations and promoting global perspectives in veterinary education.

Volunteer Experience

- 2021 **Public Health Sensitization to Wedow Community**
- Rendered voluntary public sensitization clinic to members of Wedow community.
 - Offered free tests for microbial infection.
- 2022 **Environmental Conservation Volunteer, Liido Beach Cleaning**
- Collaborated with a team of dedicated youth from an environmental organization to clean up Liido Beach of plastic bags and waste, with the goal of promoting a cleaner and healthier environment.
 - Contributed to raising awareness about the importance of environmental conservation and the need for sustainable waste management practices in the community.

Referees

1. Dr. Abdirahman Ali, Ph.D, Associate researcher, Sydney University, abdirahman.a.ali@gmail.com
2. Dr. Shafi'I Abdullahi, Laboratory Coordinator, Somali National University, shaaficivet08@gmail.com

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