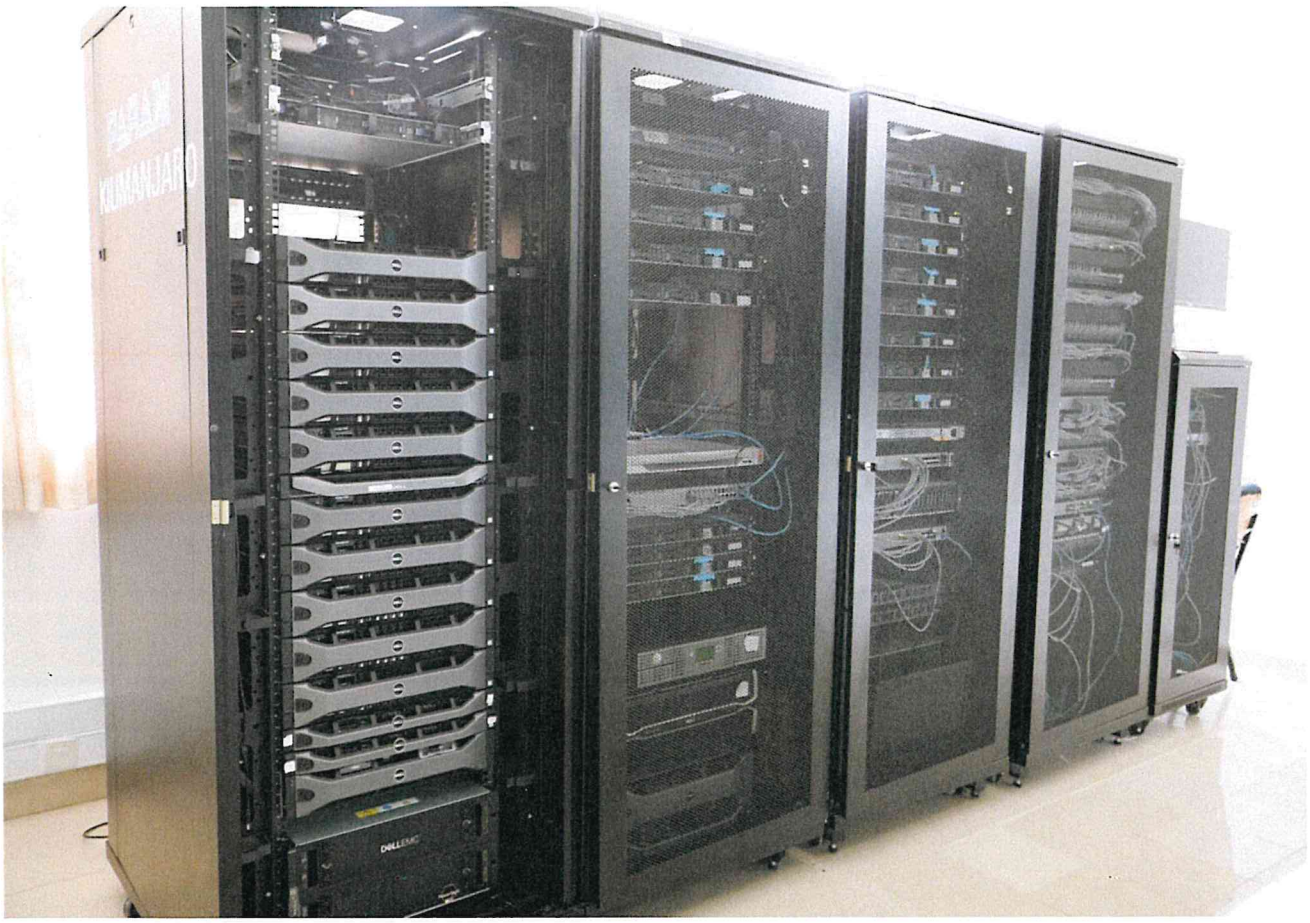
THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE NELSON MANDELA AFRICAN INSTITUTION OF SCIENCE AND TECHNOLOGY (NM-AIST)

ICT – RESOURCE CENTER

ANNOUNCEMENT



WELCOME TO ICT - RESOURCE CENTER

Academia for Society and Industry

Tengeru Campus, Nelson Mandela Road, P.O Box 447, Tengeru, Arusha; Direct Line: +255 272970001, Mobile: +255 784777580, Fax: +255 272970016; Email: vc@nm-aist.ac.tz ; Website: www.nm-aist.ac.tz

1ST - HIGH-PERFORMANCE COMPUTATION (HPC) TRAINING PROGRAM AT NM-AIST

INVITATION TO APPLY FOR PROFESSIONAL TRAINING ON HIGH-PERFORMANCE COMPUTING (HPC) USING SUPERCOMPUTER FACILITY

The Nelson Mandela African Institution of Science and Technology (NM-AIST) hosts a High Performance Computing Supercomputer infrastructure with a computing power of 14 Teraflops speed (i.e 14-trillion floating point operations per second). The use of the high performance computing facility is tailored to advanced modeling and data analytics tasks for data hungry and big data generating sectors such as healthcare, tourism, education, land use, agriculture, climate, engineering, mining to mention a few. With Parallel Computing techniques across a number of CPU or GPU Accellerator, the supercomputer is designed to provide efficiency and effectiveness in all tasks related to computational modeling, simulation, forecasting, predictions and characterization. In addition, the facility provides an environment for software application testing and big data storage and retrieve, and allow virtual/remote host computing.

The ICT-RC at NM-AIST in collaboration with Centre for Development of Advanced Computing (CDAC), Pune (India) has prepared a one week professional training to relevant stakeholders on the use of HPC applications as well as awareness for internal capacity building relevant for ministries, research institutions, agencies, companies and NGO's. Through the training, participants will delve into the world of high-performance computing technology, which involves the use of Supercomputers to process data and perform calculations at high speeds, and use parallel processing techniques to solve complex computational problems. They will gain hands-on experience in developing and optimizing HPC applications for tasks like scientific modelling and simulations, big data analytics, machine learning, predictions and forecasting complex models, optimize processes and design. The course will introduce parallel programming languages and libraries, allowing professionals to harness the immense computational power of HPC systems. Specifically, participants will be strengtherned on:

- Shared and distributed memory parallel computing
- Parallel Algorithmic Paradigms in HPC
- Weather modeling / Atmospheric Sciences
- Computational fluid dynamics
- GPGPU Computing and Parallelism
- Bioinformatics and Molecular Dynamics Applications
- Big Data Analytics and Optimization
- Code & Compiler optimization

By the end of the course, professionals will be equipped with the skills and knowledge needed to tackle large-scale data analysis challenges and leverage high-performance computing resources. This course is ideal for individuals working in data-driven industries, research, or any field that requires advanced data processing capabilities.

PROPOSED PARTICIPANTS

The proposed partcipants are the following:-

1. ICT Professionals
2. Researchers
3. Directors

8. Data-Driven Analyst
9. Data Scientist
10. Market Intelligence Analyst
11. Data Management Officer
12. Statisticians

REGISTRATION FOR THE TRAINING

The training is expected to take place on **20th May – 24th May 2024.** Training cost is Six hundred and fifty thousands only (650,000 TZS) per participant. With the given registration fees, participants will be covered for tea/coffee break, lunch, evening tea and training certificate. Slots for the training series are limited and admission will be based on *First come, first served* basis for each training cycle. Kindly, an interested participant may register for the training through our Online Registration Form link. Details about payment and relevant procedure will be given to prospective participants after registration. Accommodation on campus or nearby locations will be facilitated on participants costs, upon request.

For further details about the training and the operations of the ICT-RC at NM-AIST, kindly reach out any of the following staff:

1. Dr. Devotha Nyambo (Ag. Center Leader),
   Email: devotha.nyambo@nm-aist.ac.tz
   Mobile: +255 752 905 156, or

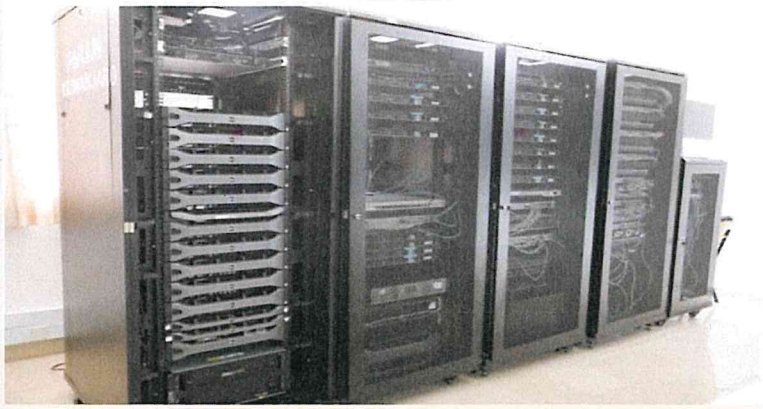
2. Mr. Mdoe Mwamnyange (Ag. Deputy Center Leader),
   E-mail: mdoe.mwamnyange@nm-aist.ac.tz
   Mobile: +255 766 230 931

3. Mr. Adam Mawenya (System Administrator),
   E-mail: adam.mawenya@nm-aist.ac.tz
   Mobile: +255 768 554 934

Yours Sincerely,

Mr. Mdoe Mwamnyange
Ag. DEPUTY CENTER LEADER AND HPC EXPERT

The Nelson Mandela African Institution of Science and Technology (NM-AIST)



Param - Kilimanjaro Super Computer

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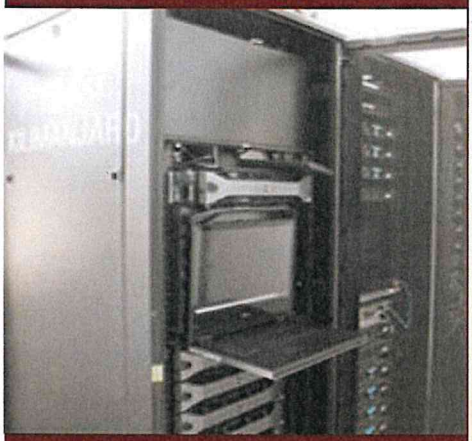
HPC Application Domains

High-Performance Computing (HPC) can be used to help scientists find sources of renewable energy, understand the evolution of the universe, predict and track storms, create new materials. In media and entertainment, HPC can be used in editing feature films, render mind-blowing special effects, and stream life events. In Oil and Gas HPC can be used to identify more accurately where to drill for new wells. In Artificial Intelligence and Machine Learning, HPC can be used to detect credit card fraud, teach self-driving vehicles, and improve cancer screening techniques. Financial Services, HPC can be used to track real time stock trends and automated trading. HPC is used in designing new products, and simulate test scenarios. HPC can also be used to develop cures for diseases like diabetes and cancer, conducts DNA Sequencing to enable faster and accurate patient diagnosis.

Contacts:

- **The Nelson Mandela**
- **African Institution of Science and Technology (NM-AIST)**
- **P. O. Box 447**
- **Arusha, Tanzania**
- **E-mail: hpc@nm-aist.ac.tz Mobile: +255 752 905156 / +255 766 230931**



HIGH-PERFORMANCE COMPUTATION SOLUTION

- Artificial Intelligence
- Big Data Analytics and Optimization
- Machine Learning
- Products Design and Modeling
- Data Modeling and Simulation
- Customer Relation Predictions
- Genetic Analysis
- Medicine and Computing
- Weather Forecasting and Ocean Modeling
- Computational Chemistry
- Fluid Dynamics
- Bioinformatics and Molecular Modelling

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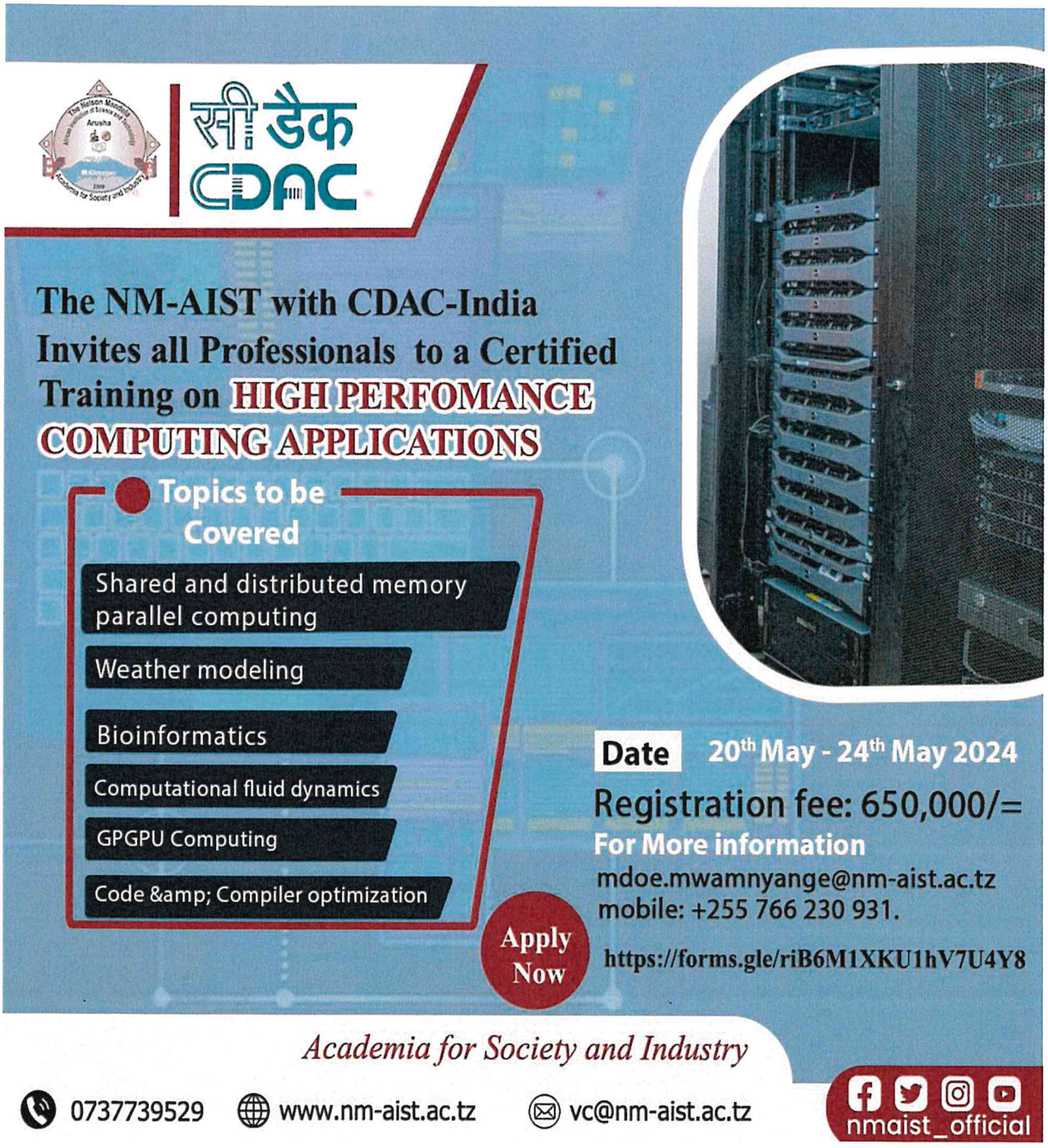
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CDAC
The NM-AIST with CDAC-India
Invites all Professionals to a Certified
Training on HIGH PERFOMANCE
COMPUTING APPLICATIONS
Topics to be Covered
Shared and distributed memory parallel computing
Weather modeling
Bioinformatics
Computational fluid dynamics
GPGPU Computing
Code & Compiler optimization
Date 20th May - 24th May 2024
Registration fee: 650,000/=
For More information
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