

MAPRONANO-ACE –IDI ARTIFICIAL INTELLIGENCE, MACHINE LEARNING & BIOINFORMATICS SHORT COURSE TIMETABLE

January 23rd – 25th 2023

MONDAY		TUESDAY	WEDNESDAY
Date	23rd	24th	25th
8:00-8:30 Hrs	Registration	THEORY: Introduction to R & Data analysis Dr. Eric Katagirya	THEORY: ML Platforms: How to get started quickly: (Jupyter Notebooks.) Atwine Mugume
8:30-9:00 Hrs	Welcome Remarks: ➤ Mr. Brian Mujuni: Coordinator, MAPRONANO ACE ➤ Dr. Daudi Jjingo: Director ACE Bioinformatics IDI ➤ Prof. Charles Ibingira: CoPI MAPRONANO ACE and Professor of Medicine, CHS@MAK ➤ Prof. John Baptist Kirabira: PI MAPRONANO ACE and Professor of Mechanical Engineering, CEDAT Makerere University	THEORY: Introduction to Natural Language Processing and its applications. Atwine Mugume	THEORY: ML Platforms: How to get started quickly: (Jupyter Notebooks.) Atwine Mugume
9:00-10:00 Hrs	THEORY: Part I Introduction to Linux Overview of LINUX/UNIX command lines Kakembo Fredrick	Theory: Proteomics and Protein structure analysis Dr. Charles Kato Drago	THEORY: Part II Introduction to NGS and applications Dr. Gerald Mboowa
10:00-10:30 Hrs	BREAK	BREAK	BREAK
10:30-11:00 Hrs	THEORY: Introduction to AI Atwine Mugume	Practical: Proteomics and Protein structure analysis Dr. Charles Kato Drago	THEORY: THEORY: Neural Networks Alfred Ssekagiri
11:00-11:30 Hrs	THEORY: Bioethics of AI Dr. Daudi Jingo	Training Opportunities in AI, ML & Bioinformatics Dr. David Kateete	Introduction to Deep Learning Alfred Ssekagiri

11:30-12:30 HRS	THEORY: Regression – Linear regression & Logistics regression Alfred Ssekagiri	THEORY: AutoML making ML/AI decentralized: Introduction to Pycaret pipelines. Atwine Mugume	Introduction to Deep Learning Alfred Ssekagiri
12:30-13:30 HRS	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
13:30-14:30 HRS	THEORY: Clustering and Classification Alfred Ssekagiri	PRACTICALS: Introduction to R & Data analysis Dr. Eric Katagirya	THEORY: Support Vector Machines (SVM)— Alfred Ssekagiri
14:30-15:30 HRS	THEORY: Dimensionality Reduction Alfred Ssekagiri	PRACTICALS: Bioinformatics, AI Workflow—Computational infrastructure, HPC data acquisition -- A practical demonstration Kakembo	PRACTICAL: Genome Assembly & Annotation, Sequence Analysis & Interpretation Dr. Gerald Mboowa
15:30-17:00 HRS	PRACTICAL: Introduction to Modelling: Using Sklearn (for linear models: Linear Regression) Atwine Mugume.	PRACTICAL: Modelling diabetes with Pycaret. Atwine Mugume	Closing Remarks: ➤ Mr. Brian Mujuni: Coordinator, MAPRONANO ACE ➤ Dr. Daudi Jjingo: Director ACE Bioinformatics IDI ➤ Prof. Charles Ibingira: CoPI MAPRONANO ACE and Professor of Medicine, CHS@MAK ➤ Prof. John Baptist Kirabira: PI MAPRONANO ACE and Professor of Mechanical Engineering, CEDAT Makerere University

Course coordinators

- 1 Dr Kenneth Ssekatawa (MAPRONANO, Makerere University)
- 2 Dafala Kezimbara (CHS, Dpt of Immunology, Makerere University)
- 3 Dr Rapheal Wangala (MUST)
- 4 Mr Elish Kwizera (KIU)

Facilitators

- 1 Dr. Daudi Jjingo
- 2 Dr. David Kateete
- 3 Dr Charles Kato Drago
- 4 Dr Gerald Mboowa
- 5 Dr Eric Katagirya
- 6 Mr. Atwine Mugume
- 7 Kakembo Fredrick
- 8 Alfred Ssekagiri